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RUBBERBANDING URBANISM

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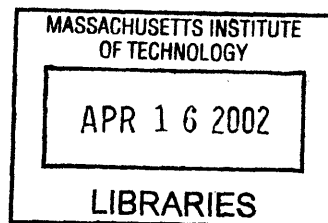
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ROTCH



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RUBBERBANDING URBANISM

AN ALTERNATIVE STRATEGY FOR URBAN DESIGN AND ARCHITECTURAL DEVELOPMENT FOR NOTODDEN, NORWAY

LORA H. KIM

SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE

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ABSTRACT

The comprehensive planning approach is a method that necessitates parceling activities, zones, and the connective infrastructure. Buildings thus become dumb boxes that are repeated and placed in their work parcels, live parcels, or play parcels. The space between the boxes, either becomes neglected space or traffic space. This stratification and separation is a product of the blunt expediency inherent in modern development. (Kwinter and Fabricius. "Generica," 525) In the past, it took decades or centuries to develop cities; now, it typically takes 5-15 years. (Ibid) This efficient and fast machine predicts social and local processes as the master plan calculates every step. There is little regard for time as a major factor in this production, in terms of time as economic and political support systems that may change behind the development project, and secondly, time as a component that may allow for unexpected behavioral and organizational patterns to emerge. The current strategy flattens the complexity of our contemporary urban condition, and the result is a stale, static, and culturally unsustainable urbanism.

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Notodden is currently using this orderly process of structuring urbanism to revitalize the new downtown. This master plan exposes how the end architectural forms and urban patterns become static and lifeless. As a result, even when there is financial and political support for innovation as there are in Notodden, it seems we are stuck to repeat the same approaches and forms. The example of Notodden's master plan wholly exhibits the paradigm crisis in which urban planning is "exposed as anachronistic, dangerous and intellectually spurious." (Graham and Marvin, 110) However, the potential of Notodden, Norway, the site of exploration, lies in the transformation of the new city, not through the current master plan, but through the specific programmatic negotiations and architectural development of the currently proposed Blues Center. Architecture becomes the urban generator, and the Blues Center, which is transformed from a performance site in August for the annual Notodden Blues Festival, into a music, media and skills center. This first project becomes the catalyst for cultural, social and economic change for this urban area. By prioritizing and focusing on the potential energy of this principal vision, it generates other unexpected programmatic and place-making concepts that need to be conceived after this primary organizational, cultural, and economic force is constructed through a Rubberbanding Urbanism.

Rubberbanding urbanism is an original concept that demands participants of the urban development process to perceive the existing urban scape as adjustable and negotiable. Within this urban scape, there are flexible boundaries or bands that can stretch beyond traditional parcel lines and overlap with other bands. As the notion of bands have no set definition attached to them yet in urbanism, it is easier to see them more abstractly at many scales: as predefined programs, as current parcels or boxes, or as infrastructure, building, open space. The goal is to rethink and reinvent density, function, and time in an urban and architectural context while allowing for negotiation at each step. Because the proposed site in Notodden is barren, this seems appropriate as a development idea. This method actively attempts to "...[privilege] not the formal, morphological attributes of building, but rather [create] a repertoire of operatives affected by time patterns of connectivity, and changing populations of multiple components." (Graham and Marvin, 110) The bands are dotted so that they suggest flexibility until other bands present constraints or parameters. As bands overlap or stretch, new hybrids can be created. Spaces, programs, and scapes can then be designed through this unpredictable and constantly negotiable process. Throughout the process, participants create the rules and protocols as they go.

Thesis Supervisors: William Porter; William Mitchell

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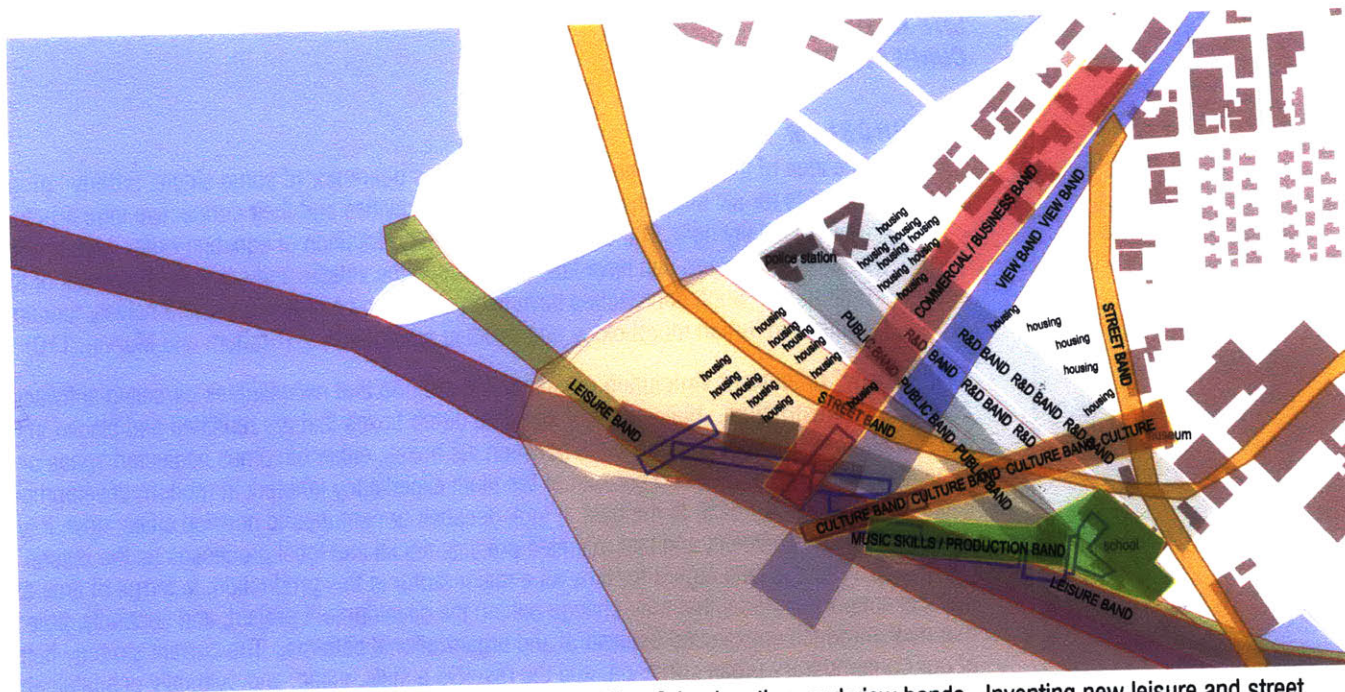
My Parents, Parker House, Samantha, Ed, Mary, and Bee for constant love and support.

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RUBBERBANDING URBANISM

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All images and work are by the author unless otherwise noted.



PROCESS DIAGRAM : Stretching existing commercial, public, r&d, education, and view bands. Inventing new leisure and street bands. Finding potential from the overlap of the bands and locating the site of initial architectural development.

AN URBAN CRISIS

PROBLEM

SITE & CONTEXT

CURRENT PROPOSAL

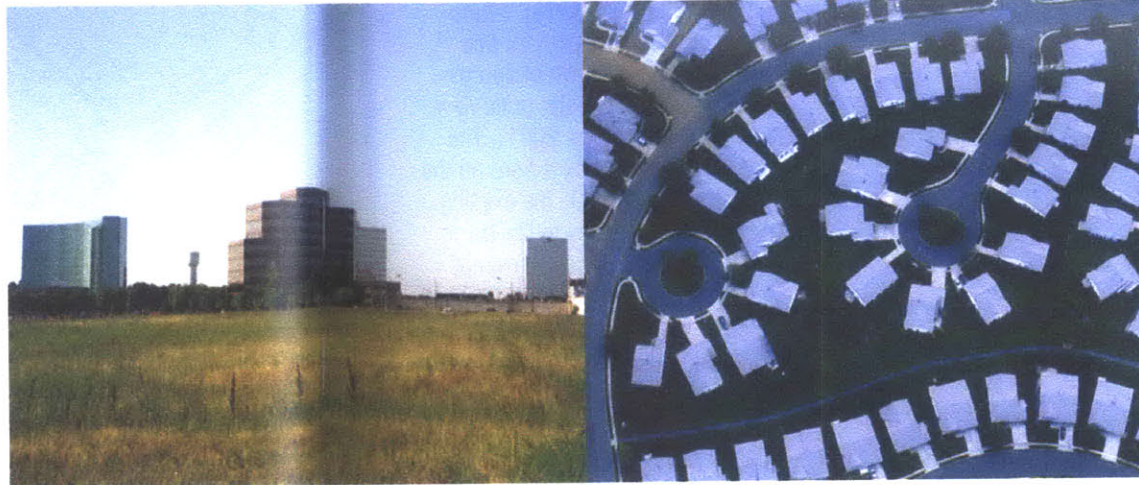
THE PROBLEM

The idea of the comprehensive urban plan, as guarantor of some single, orderly 'progress' offering 'benefits for all' through the layout of urban activities and their connective infrastructure, has been the major casualty here. The classic urban planning tradition of equating order with equilibrium and disorder with disequilibrium can have little place within the volatile and complex dynamics of the postmodern metropolis. Such approaches have been shown to be reductionist and naively functionalist...through controlling 'urban morphology and building typologies...' (Graham and Marvin, 110)

This "orderly" process of structuring urbanism is a method that necessitates parceling activities, zones, and the connective infrastructure. Buildings thus become dumb boxes that are repeated and placed in their work parcels, live parcels, or play parcels. The space between the boxes, either becomes neglected space or traffic space. This stratification and separation is a product of the blunt expediency inherent in modern development. (Kwinter and Fabricius. "Generica," 525) In the past, it took decades or centuries to develop cities; now, it typically takes 5-15 years. (Ibid) This efficient and fast machine predicts social and local processes as the master plan calculates every step. There is little regard for time as a major factor in this production, in terms of time as economic and political support systems that may change behind the development project, and secondly, time as a component that may introduce unexpected behavioral and organizational patterns. The current strategy flattens the complexity of our contemporary urban condition, and the result is a stale, static, and culturally unsustainable urbanism.

Developers, who have traditionally governed and dictated this arena, are mastering the method of duplicating these types of developments onto various urban sites. From Houston's downtown to the working centers near Orange County airport in Southern California, we too often see this pattern of reproducing partitioned urbanism, "packaged developments" (Graham and Marvin quoting Knox, 122), and boxed-in architecture. (Kwinter and Fabricius. "Houston," 547) The proliferation of the US model has lead to similar urban developments outside the US even where is financial and political support for innovation. This is the case in Notodden, Norway, where despite having the necessary support systems to produce innovation, the current urban development scheme, render predictable and generic possibilities. The copying and pasting of these types of developments, when not questioned or redefined, render design at both the urban and architectural scale irrelevant. (Kwinter and Fabricius. "Generica," 525) This "paradigm crisis" (Graham and Marvin, 110) demands an alternative approach that will lead to innovative urban growth and architectural constructions over time.

For this project, an innovative strategy attempts to un-package the packaged development by constructing urban patterns and flows that rethink the segregation of programs, reforms relationships between existing and new infrastructures, architectures, and landscapes.



Houston, Texas
(McQuitty and Montag, 522, *Mutations*)

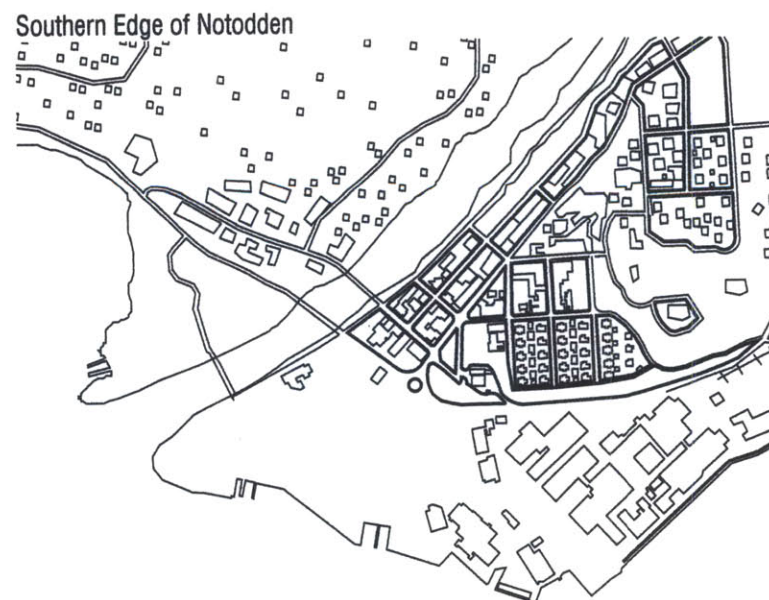
America
(Jordi Bernado, 244, *Mutations*)

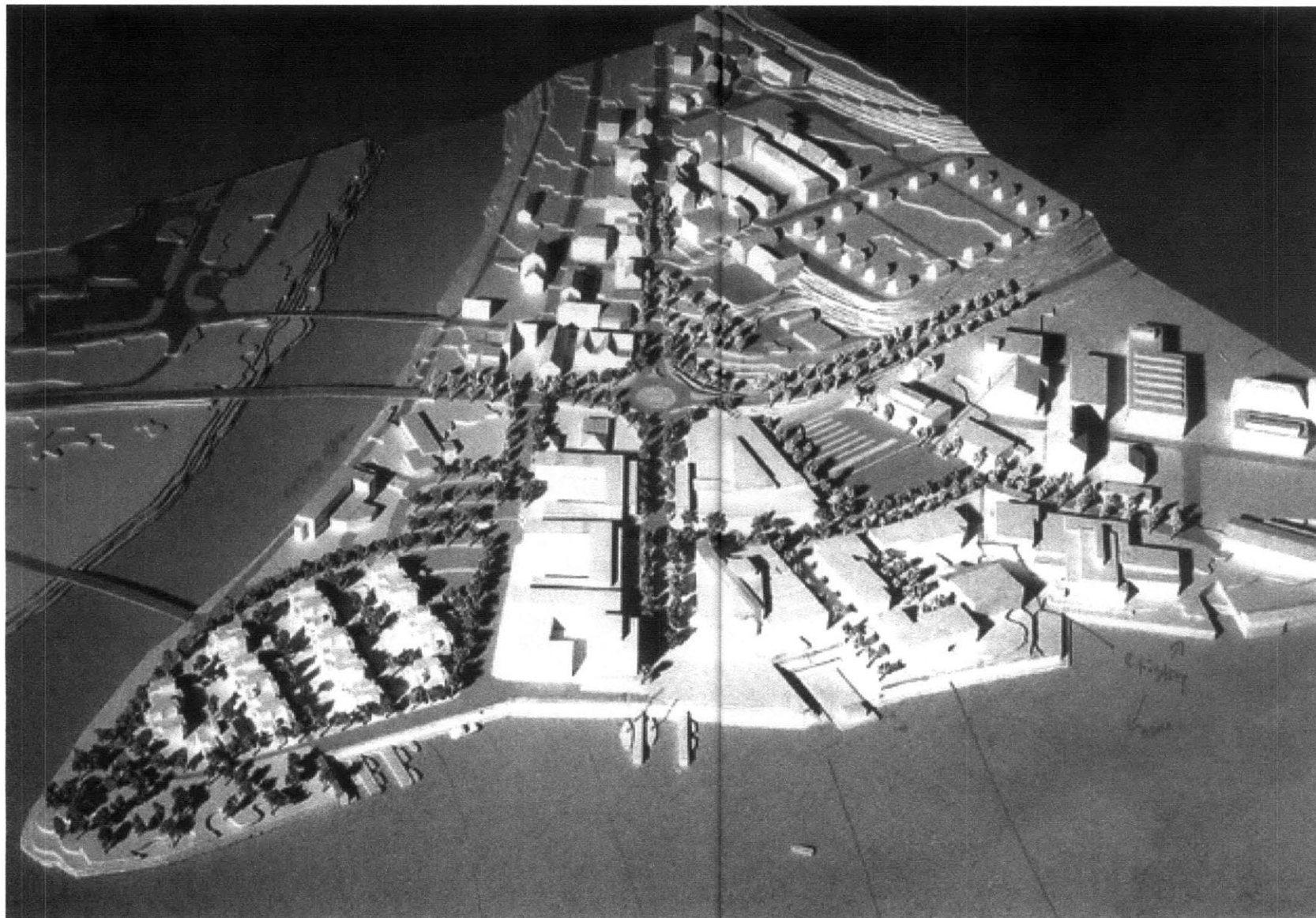


**THE CONTEXT:
NOTODDEN, NORWAY**

The old docks: once a site of great activity, now abandoned infrastructure

The master plan for the redevelopment of Notodden, Norway focuses on Notodden's south edge. The site is approximately 1,500 feet long by 1,300 ft wide, owned by two major corporations in Notodden, the municipality, and a developer. In 1997, this group received 73 million Norwegian Kroners to provide a new economic, educational, and cultural plan for this industrial worker town of approximately 10,000 people. (Interview with Developer, June 2001) The site is surrounded by a fjord on the east and south, while the existing city of Notodden lies to the North. The site is mostly barren except for old docks on the southernmost edge of the site, the connection from the project site to the existing downtown through the main street, and the cluster of industrial complexes to the west of the site.





Architect's Master Plan of Southern Edge of Notodden, Norway; 03-30-00

Many of the large companies which dominated life in Notodden in the past have since moved out. Therefore, the job market is sparse. Most of the people drive 45 minutes to Kongsberg or an hour away to Oslo to find work. Others who are unemployed are skilled only in factory work of the now derelict factories. (Interview with Developer, June 2001) In addition, recent competency tests also show that Notodden's youth average lower on the exams than young people in other Norwegian cities. (Competency Scores translated by Vice Mayor, from Interview June 2001) There is a low moral in the city.(Ibid) Therefore, the municipality has a new initiative: to re-skill and provide jobs to Notodden's citizen's within the city itself. In order to re-establish pride and status as an economically sustainable city, the clients have a strong desire to create new opportunities for the people of Notodden. Furthermore, they aim to develop a performance space for the blues festival that is held every August through the establishment of a Blues Music Center by 2003. Through these initiatives, they hope to improve Notodden's image within the city, then the region, and possibly the country.

The total timeframe for this development is 10 to 15 years. The phases include in the development are as follows: 1) to install hi-bandwidth under the main street and proposed site (2001-2002), 2) refurbish the street with landscaping, street furniture, and sub-street heating by 2002, 3) build a new terminal for buses (fully financed from municipality), 4) develop a blues music center by 2003 from state funds, 5) develop family housing, within 2 to 3 years, 6) build a supermarket and shopping mall (they are currently looking for investors), and 7) build a working center. (Interview with Developer, June 2001)

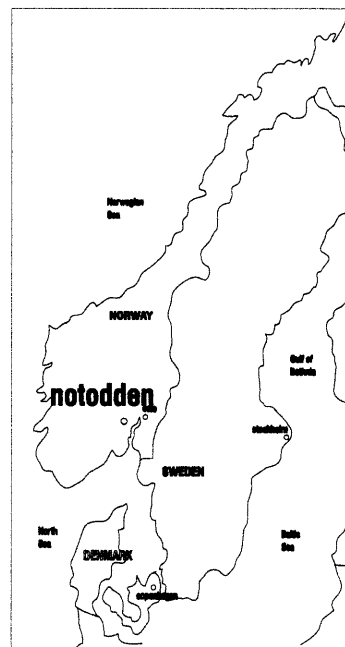
Because it is a real site with real stakeholders and real, immediate needs, there exists the potential to further develop the proposal. The reality and timing were important factors in choosing a site because I hoped to develop an academic thesis that I could pursue theoretically and practically after this master's work is complete.



Existing industrial work center
Now mostly derelict but some businesses occupy these buildings.
(Image from visitors map of Notodden)



Postcard from Notodden: a worker town. Image of municipal, commercial to left, worker housing on right, and above the trees are manager housing



Map of Scandinavia: Notodden,
Norway

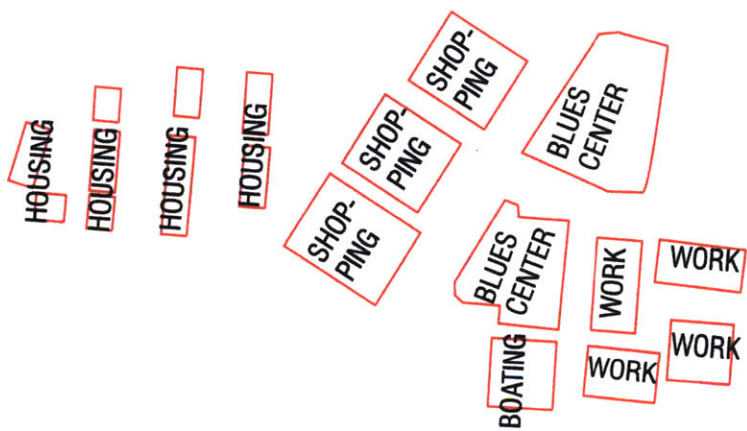


Regional Plan of Notodden

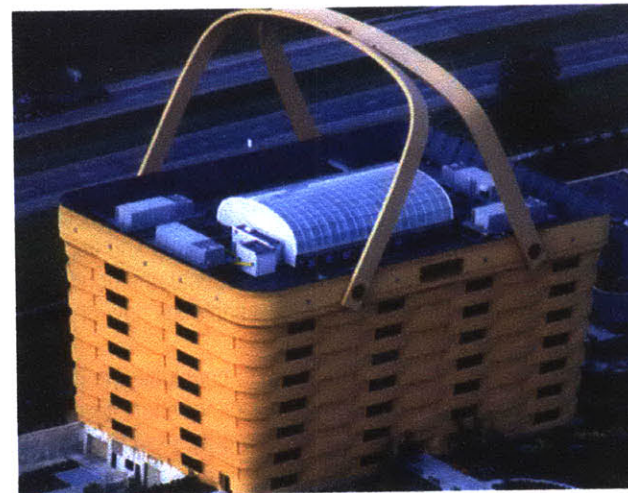
THE EXISTING NOTODDEN PROPOSAL

Given the aims to become a cultural and music center, as well as to re-skill and educate its people, the master plan is problematic and reveals little about these priorities. This image demonstrates the cutting and pasting of generic, packaged forms and patterns onto this Norwegian landscape in which urban patterns and architectural forms are segregated equally into living, shopping, cultural, and working zones. It is difficult to distinguish the shopping, working, and blues center from each other because they vary little in scale, size, and shape. The problem with these types of developments is they are uncommitted to a vision. Irrespective of orientation, to context, to vision, these packaged forms are derived from a primarily functional and reductionist approach.

Secondly, it is difficult to see how the blues center which is primarily for performances and events in August, will catalyze economic, social and cultural growth throughout the year. This program is a wonderful place to begin, but the current architectural proposal becomes more of a stadium type development that serves a singular purpose typically during a specific time of the year. In the end, it may prove to be culturally, environmentally, and economically unsustainable. These types of projects "...are frequently obsolete and are torn down, in favor of yet newer ones, in as little as seven years... (Kwinter and Fabricius, "Generica," 527)



Current Proposal segregates program and zones into housing - shopping - leisure and culture - work.



"Packaged Developments",
(image by Alex Maclean, 220, *Mutations*)

Thirdly, the proposal does not take into account the complexities of modern living, working and playing. It divides and separates uses in an orderly manner which does not enable what digital technology and contemporary society now affords us. The clients are supportive of the idea that productivity is not associated with a particular place of work. More specifically, the clients aim to 1) develop competence, 2) build communications and transportation infrastructure, mostly in the downtown and in main street, and 3) finance packages for companies to realize their goals. (Interview with Developer, June 2001) Through the development of infrastructures and financial support systems, they encourage individuals to redefine the idea the method of work with the hopes of enabling these individuals and the city to catch up to other parts of Norway and Scandinavia. Nevertheless, in this 2001 proposal, the boundaries of living, working, shopping, and leisure are traditionally conceived; and thus do not enable the flow of living, working and playing easily from one space to another.

To conclude, the master plan of Notodden, Norway, stems from the logic of the American business cycle, "the logic of short term efficiencies: agility, turnover, scale," where property, resources, and urban impact is of low priority. (Kwinter and Fabricius, "Generica," 525)

Ever more scientific in means and pragmatic in its ends, development seeks no other gradient but the one of least resistance: either the continuous predatory-stopgap activity of "efficient market theory" or the "fast, cheap and out of control" breeder logic of self-regulation capital. In both cases, local economies have discovered that they can fill niches far more quickly if development is left to unconscious reflex and if their field of activity is cleared of any of the obstacles associated with premeditation or design. (Ibid)

To choose a method of least resistance demonstrates the sorry state of our urban condition. Innovation is not a priority, and if innovation happens, it occurs purely by chance. Recently, our cities have taken too many chances with too little reward. As a result, the master plan is a set of bland, efficient, boxed-in architectures that are unaware of culture and physical context. It does not enable social, intellectual and spontaneous activity to occur. This master plan exposes the disjointed relationship between the initial aims and end results. Even when there is financial and political support for innovation as there are in Notodden, it seems we are stuck to repeat the same approaches and forms. The example of Notodden's master plan wholly exhibits the paradigm crisis in which urban planning is "exposed as anachronistic, dangerous and intellectually spurious." (Graham and Marvin, 110)



Traveler with laptop and cell phone; Oslo Airport, photo by Lora Kim



Airport employee travels through airport on scooter.
This mode of transportation is typically used by many airport employees; Oslo Airport, photo by Lora Kim

ALTERNATIVE STRATEGY

RUBBERBANDING

PERSPECTIVES

SCAPES

PROGRAMS-TIME

The potential of this site lies in the transformation of the new city, not through the current master plan, but through the specific programmatic negotiations and architectural development of the currently proposed Blues Center. Architecture becomes the urban generator, and the Blues Center, which is transformed from a performance site in August for the annual Notodden Blues Festival, into a music, media and skills center, becomes the catalyst for cultural, social and economic change for this urban area.

Culture is crucially important. It is the often forgotten glue that may hold things together in cities. It is in the cultural arena that the battles of the future will be fought - won and lost. Thus a cultural perspective needs to move center stage in the planning of our cities. (Verwijnen, Preface, Quote by Charles Landry from Creative Cities Conference)

By prioritizing and focusing on the potential energy of this singular vision, it generates other unexpected programmatic and place-making concepts that need to be conceived after this primary organizational, cultural, and economic force is constructed. (Easterling)

The scope of this thesis is to:

1) Design an alternative strategy of thinking about a more flexible and open-ended urban planning approach:

Rubberbanding

2) Design a culturally and economically sustainable, context driven architecture that will catalyze growth and ideas in the future for Notodden, Norway: Music and Media Notodden

ALTERNATIVE STRATEGY: RUBBERBANDING

RUBBERBANDING - to stretch, to overlap, to bind in order to find new relationships, new overlaps, new orders

PERSPECTIVES- viewpoints and opinions

rubberbanding perspectives - to stretch and overlap diverse viewpoints and opinions from traditional and non-traditional participants in the urban planning process, primarily those voices in the cultural and sociological arena

SCAPES - building, open-space, landscape, infrastructure, and everything in between

rubberbanding scapes - to stretch and bind different scapes to invent hybrid scapes

PROGRAM - work, culture, living, leisure, retail, sports, etc

TIME - 24-7 cycle, as opposed to only 9-5 or 5-8

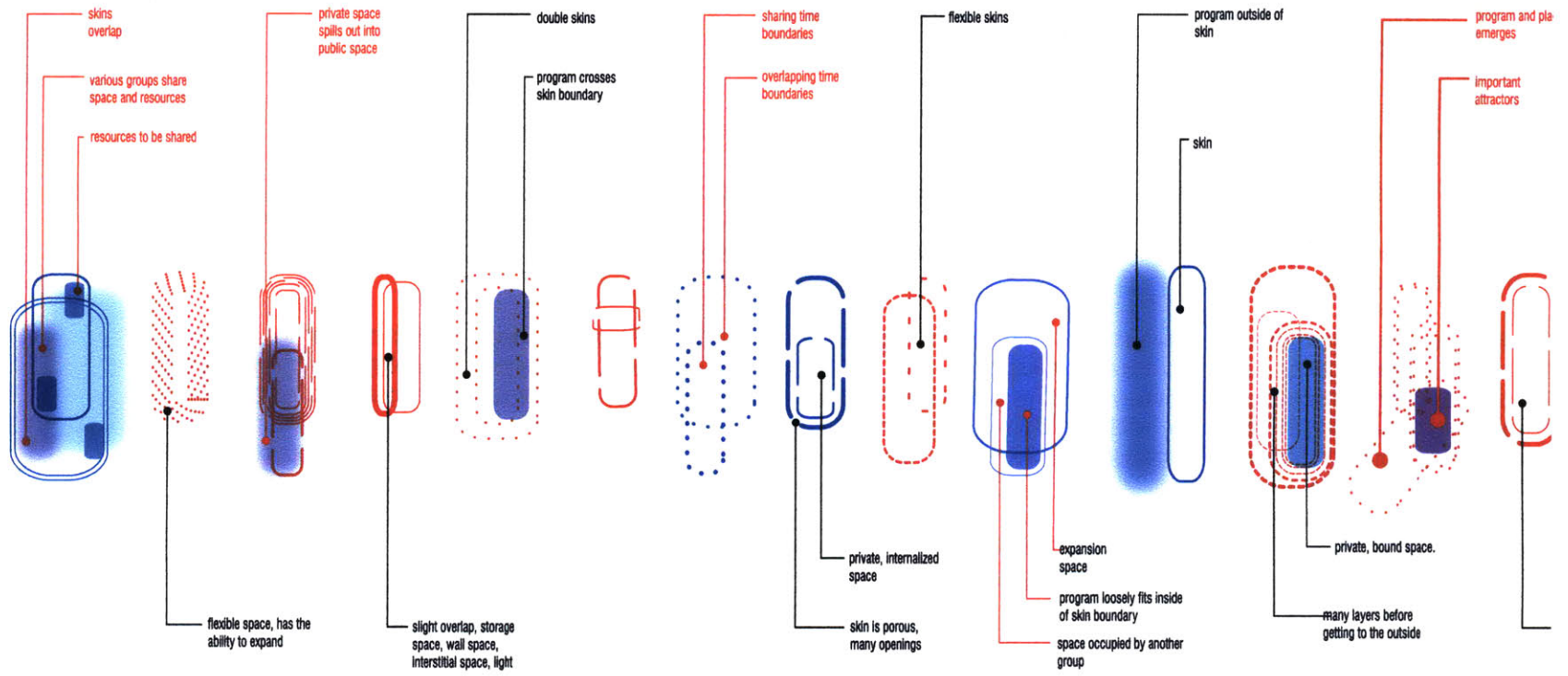
rubberbanding program and time - draw bands around various program and time intervals to invent potential and unexpected activities

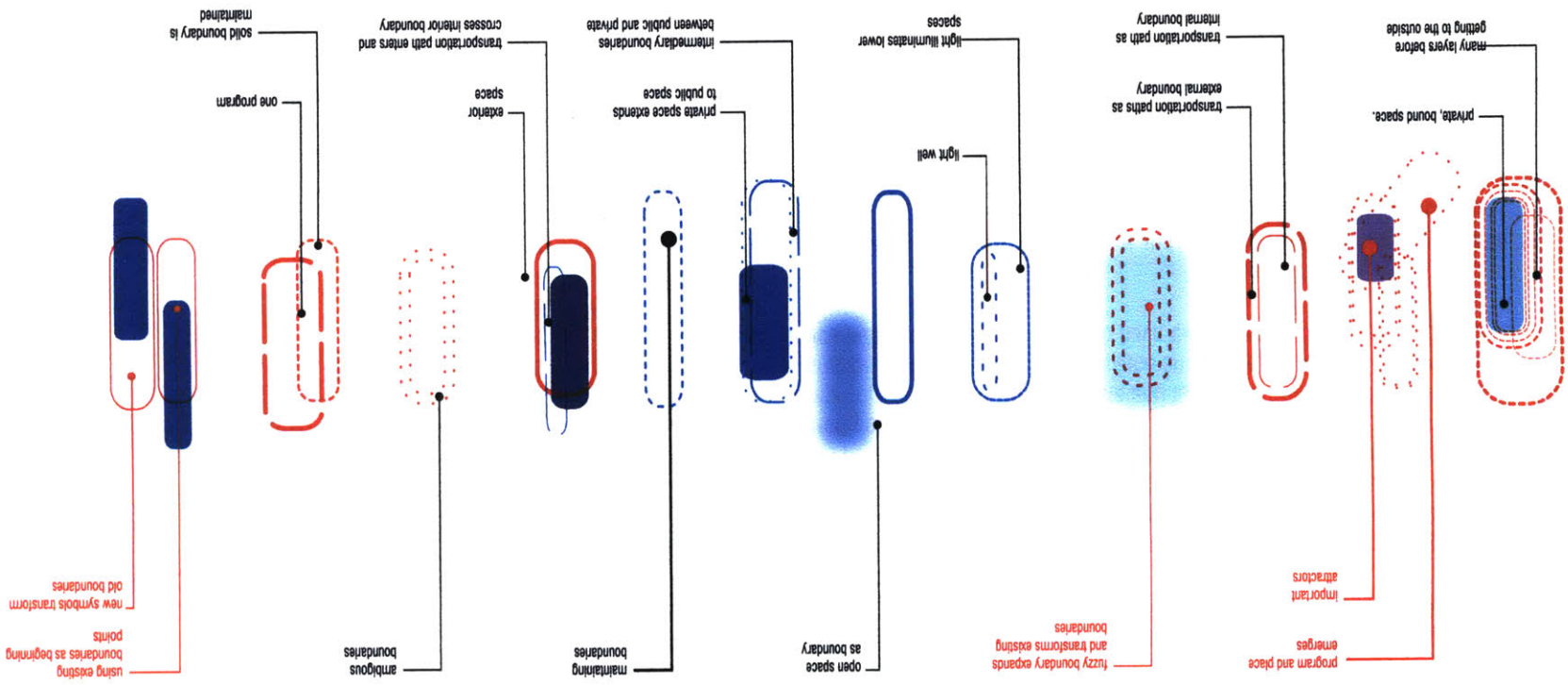
Specifically, “rubber” implies having flexibility and adaptability; “band” refers to something other than a box or a parcel, and has inherent qualities of stretching, overlapping, snapping, binding, etc; and the “-ing” refers to a process that is ongoing. It is a concept that describes flexibility and adaptability in thinking about an urban problem and creating flexible and adaptable responses to it over time. In the process, scapes, perspectives, programs, and times are re-negotiated.

In order to perceive our existing urban scape as adjustable, we must begin by seeing them through negotiable bands. These flexible boundaries, can then stretch beyond traditional parcel lines and overlap with other bands. As the notion of bands have no set definition attached to them yet in urbanism, it is easier to see them more abstractly at many scales: as predefined programs, as current parcels or boxes, or as infrastructure, building, open space. The goal is to rethink and reinvent density, function, and time in an urban and architectural context while allowing for negotiation at each step. Because the proposed site in Notodden is barren, this seems appropriate as a development idea. This method actively attempts to “...[privilege] not the formal, morphological attributes of building, but rather [create] a repertoire of operatives affected by time patterns of connectivity, and changing populations of multiple components.” (Graham and Marvin, 110) The bands are dotted so that they suggest flexibility until other bands present constraints or parameters. As bands overlap or stretch, new hybrids can be created. Spaces, programs, and scapes can then be designed through this unpredictable and constantly negotiable process. Throughout the process, participants create the rules and protocols as they go.

In short, Rubberbanding means to stretch, overlap and bind individual existing program bands in the urban-scape in order to discover new meanings, uses, and temporal speeds. (Bonomi, 450) This occurs both sectionally and in plan, and at both an urban and architectural level.

Conceptual Rubberbanding Diagram





PERSPECTIVES

Before rubberbanding physical contexts, the first negotiation that needs to be made is the inclusion of voices outside of the planning, architectural, and development professions. At the Creative City Conference in Helsinki, Charles Landry held that

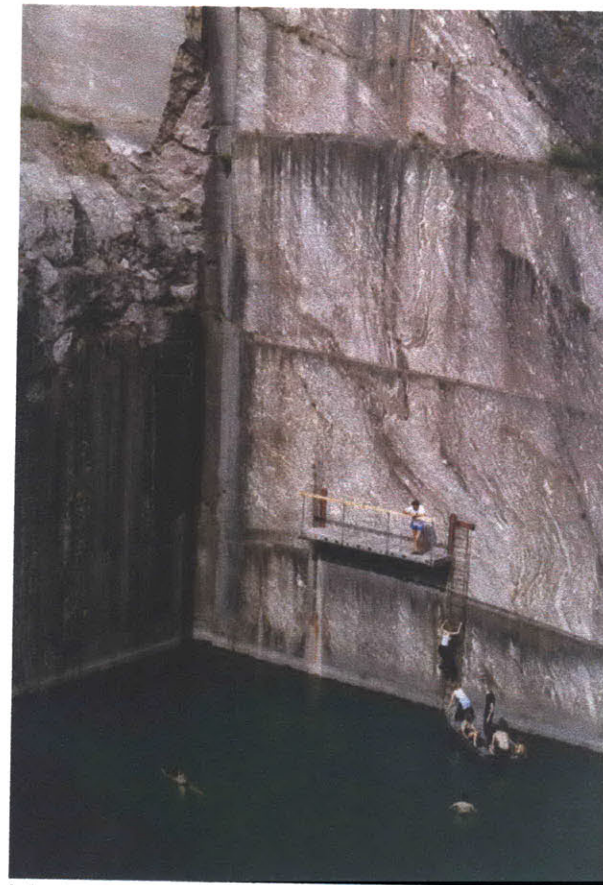
“the modern urban malaise is a complex crisis, which cannot be solved by traditional urban planning and policy. The hard sciences of urban planning need to be reformed and enriched by mobilizing the experiences of different disciplines and people currently marginalized from decision making...”

Traditional power play within the practice of urban planning, have been detrimental to the unfolding of new forms of politics, power, and social processes. (Sassen) By predicting and shaping every step of our urban layout, they limit the possibilities of new types of operations. The framework needs to allow for an unbundling of the exclusive authority over territory and people. (Sassen) “The new, diffuse urban space, in perpetual expansion, fragmented and heterogeneous, often constitutes a challenge for architects, urbanists, and politicians, for it does not match the traditional forms of appropriation, between social life and territorial rights.” (Simeoforidis, 418) Due to the role of digital technologies changing the nature of the workplace and home, the evolving nature between public and private, and the dynamics between the individuals who have the power to make daily negotiations in these areas.

By the inclusion of other players, particularly those from the cultural and sociological arena, we may be able to re-prioritize these rights and invent long-term, more creative and culturally sustainable solutions. This multifaceted perspective is vital for changing the priorities of modern development. It needs another perspective that is on the outside to help change it, to re-prioritize the plan. “Complexity and uncertainty are unavoidable terms, which must be accounted for in any hypothesis about the future of cities. The city-the urbanized territory-does not result from the direct action of certain institutional agents operating autonomously, but is the product of a complex interaction between totally different subjects, whose viewpoints and respective interests are often in conflict with each other.” (Simeoforidis, 419)



Musicians and Artists Perspective: Notodden Publications for
 Blues Music and Annual Festival in August, from Website for
 Notodden Jazz



Infrastructure used as diving board and place of leisure activities in the Netherlands
(Bas Princen, 403, *Mutations*)

SCAPES

The second negotiation, redefines the notions of building space, open space, green space, transportation space, etc. The objective is to perceive the urban scape as a connected tissue (Graham and Marvin, 32) because we now live in a "smooth space," where "...different temporality and spatiality confront each other and converge, multiple strata of temporal speeds." (Bonomi, 450) However, typically in many urban plans including the masterplan of Notodden, notions of space, program, and time are divided. Land is separated into buildings and roads. Rowan Moore writes, "... Each space tends to be separated off...each element creates a self-sufficient artificial, all embracing experience that is both controlled and controlling. The space between them is seen as background, as something you see through a car window when traveling from one such space to another." (Graham and Marvin, 122) Therefore, the urban potential dies as the urban environment is intended for separation and parcellization. What occurs in between, across, through, by - is irrelevant. In order to invent new paradigms, we must begin by seeing the potential of an "urban world where architecture is declared as landscape, infrastructure as architecture, and landscape as infrastructure." (Graham and Marvin, 110)



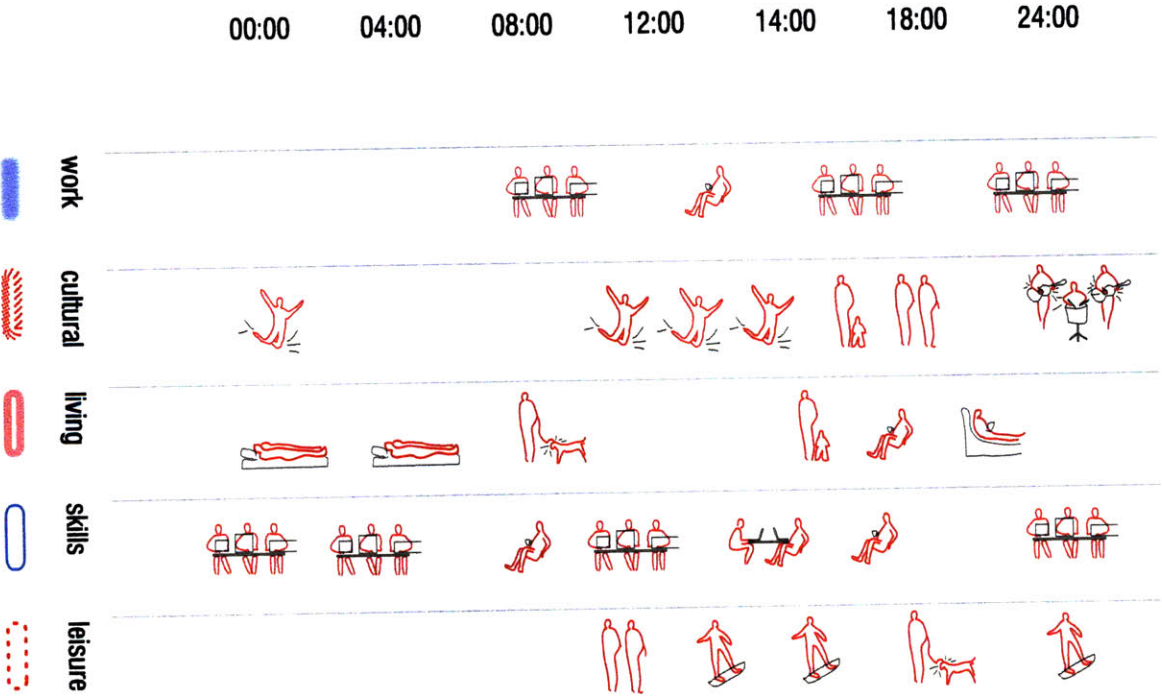
Potential Boundary Exchanges : stretching time and space

PROGRAMS - TIME

Finally, we must redefine the relationship between program and time. It is imperative to see time and program in a 24-hour cycle, not a 9-5, or 3-10, or 10-8 cycle, so that resources and spaces can be adjusted to the way we truly live, work, and play. "The era of the second modernity and of the post-Fordist societies is characterized by uncertainty and indeterminacy: 'indeterminacy, information etc. have today through electronic media, communications technology become the invisible and ubiquitous background of everyday life...'" (Simeoforidis, 419) This background is dynamic and flexible so that individuals are enabled to make individual choices about how they design his or her day. "It is an individual re-appropriation of the modes and times of collective exchange, freeing them from the particular rules of the family framework and from the invasive normalizing rules of the "architecture of entertainment," to rediscover individualized and intimate interpersonal relations." (Varra, 429) Technology and society are allowing individuals to redefine the rules that potentially free us from traditional programs and traditional concepts of time, in order for us to live in an integrated and enabling environment.

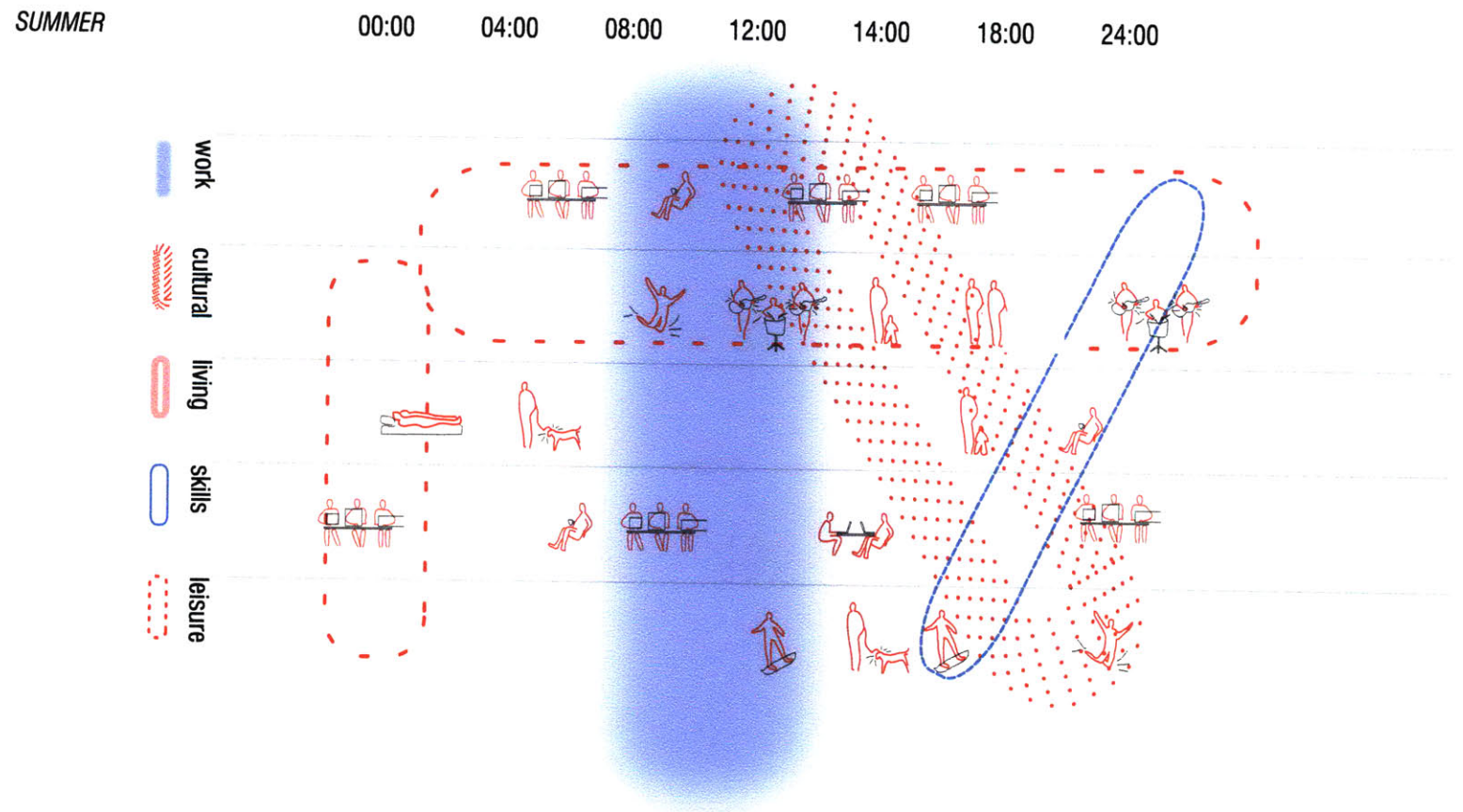


SUMMER



Activities according to program and time

30 STRATEGY : RUBBERBANDING PROGRAM & TIME

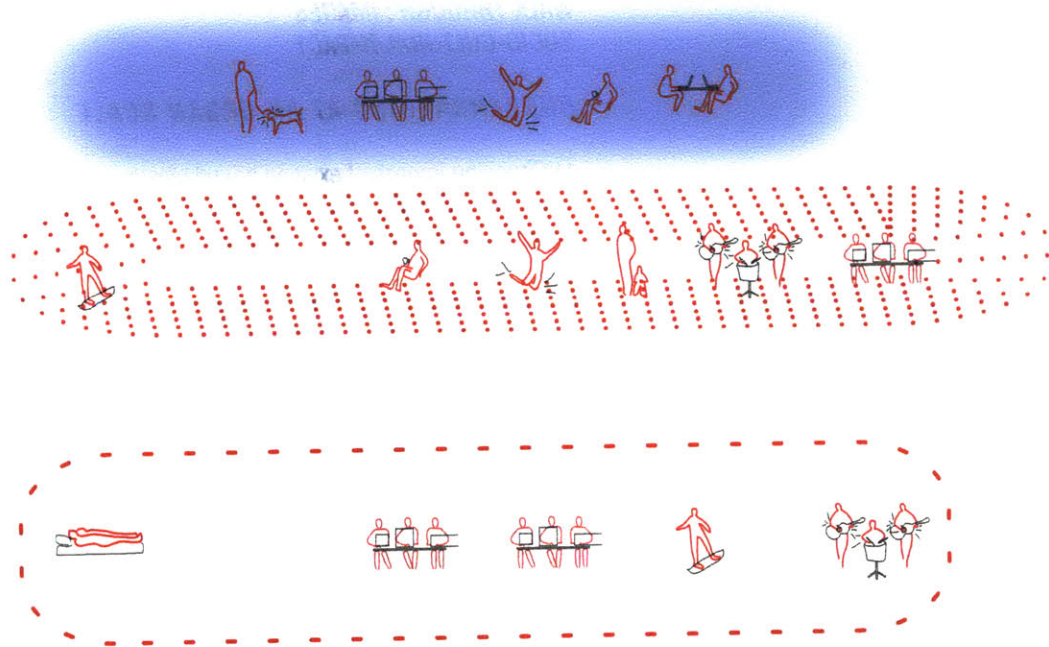


Rubberbanding Activities according to program and time

work

cultural

skills



Rubberbands of new program and time

ARCHITECTURE AS A CATALYST FOR URBAN DESIGN

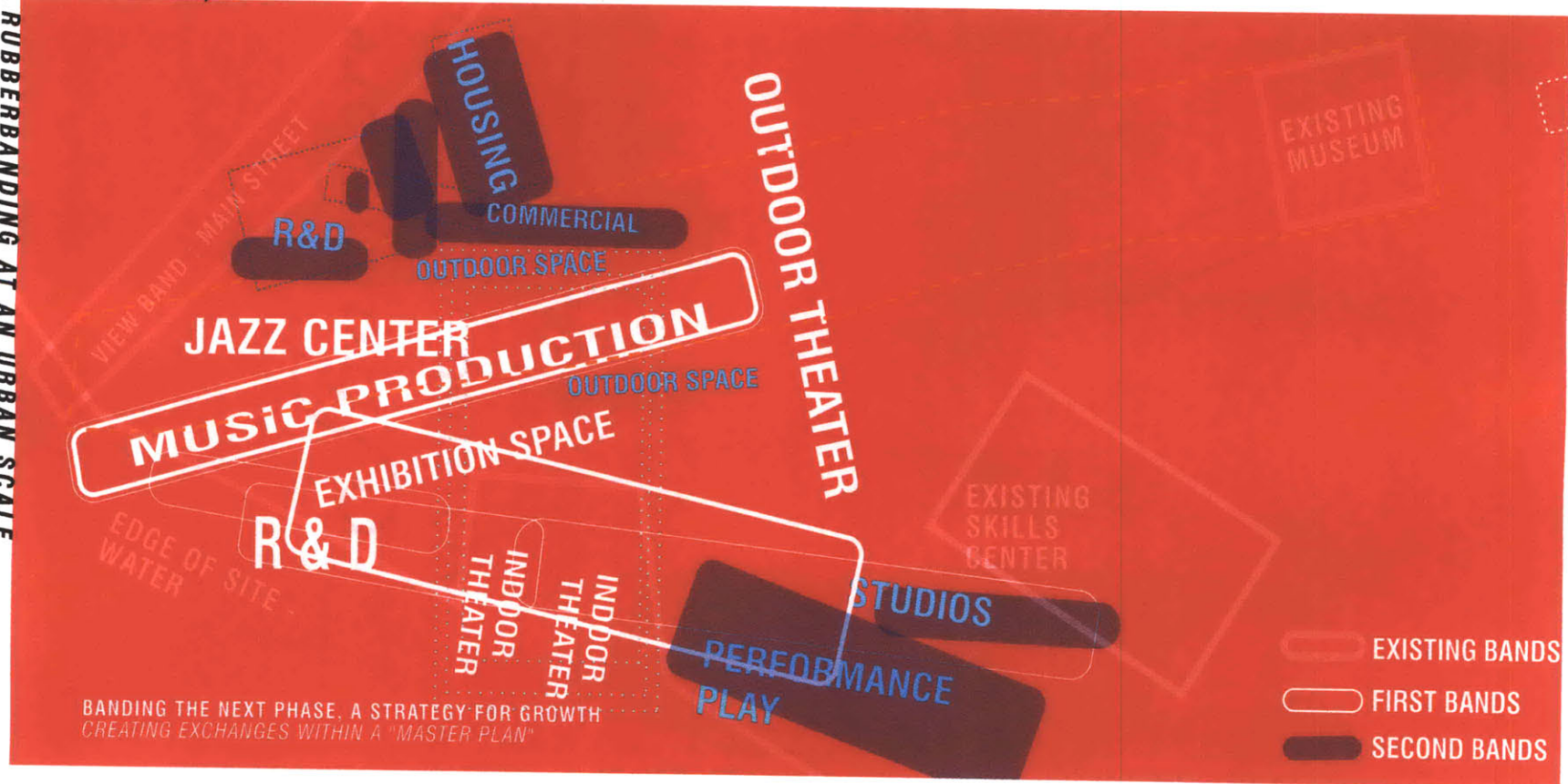
***RUBBERBANDING AT AN URBAN SCALE
PHASING AT THE ARCHITECTURAL SCALE
PLANS : PROGRAM
ELEVATIONS : MATERIALS
SECTIONS : NORTHERN SUN
WALK THROUGH : IMAGES
SOCIO-CULTURAL IMPACT***

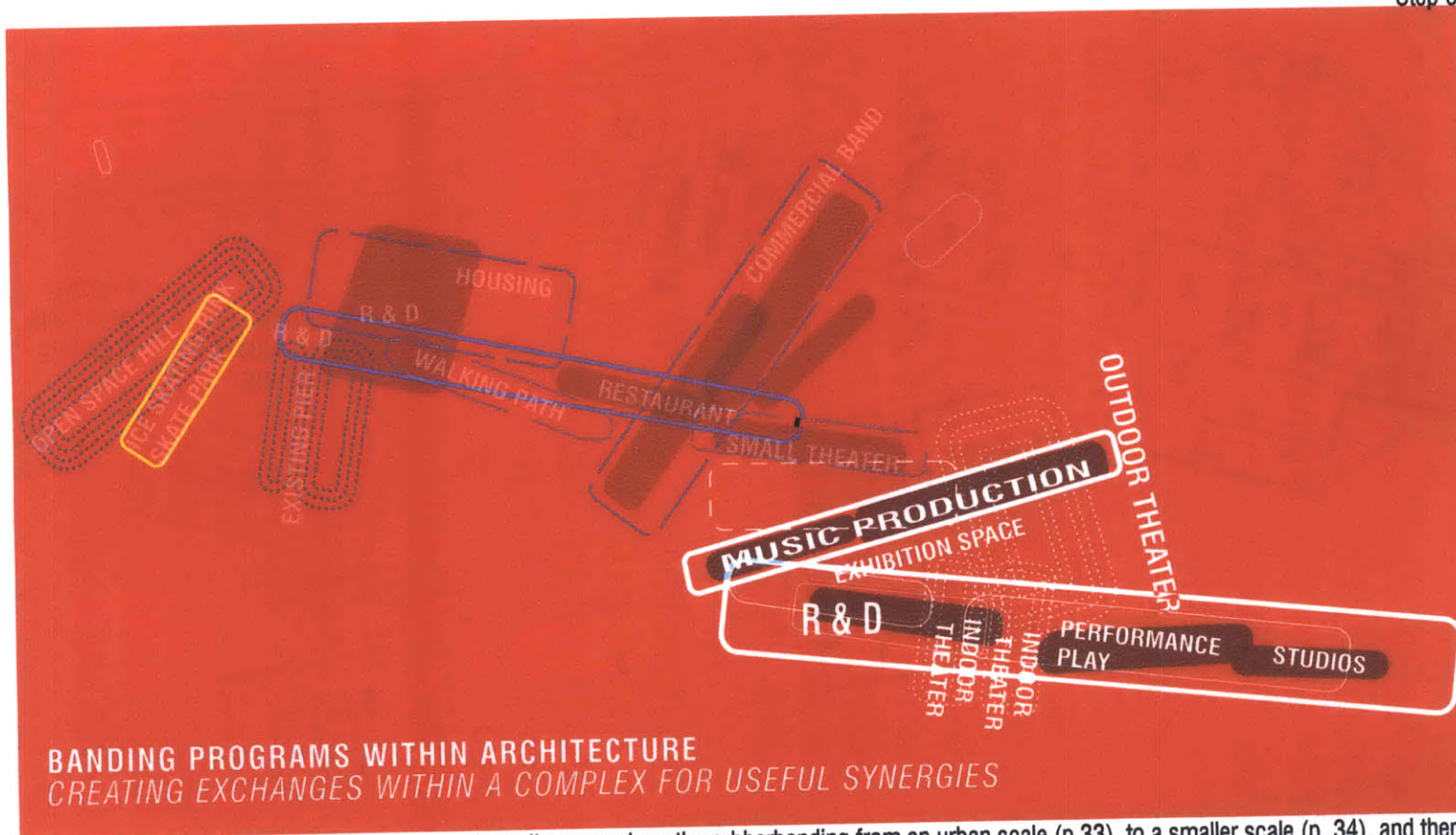
RUBBERBANDING AT AN URBAN SCALE

- 1) Choosing important existing boundaries such as the police station, the museum, the skills center, the main street, the two docks, the commercial zones; defining them as culture bands, municipal bands, leisure bands, work bands, education and skills bands, view bands, etc
- 2) Then stretching those bands; seeing overlaps and intersections thereby defining new edges, new programs, and new boundaries
- 3) Negotiating specific interests from different parties
- 4) Defining an urban agenda: culture and education (determined from interviews and master plan)
- 5) Finding where the culture and education bands bind with work bands (for economic stimulus). This overlap occurs between the existing docks and industrial complexes. The existing overlaps with culture, education, and work, with existing infrastructure (the docks) and the edge of the site, creates interesting potential for northern light, adjacencies to existing work and skills buildings, and allows for growth to rubberband between the existing downtown and the future downtown.
- 6) Zooming back out to rubberband potential future developments
- 7) Phasing #6 by negotiating at an architectural scale to determine finer overlaps and binds



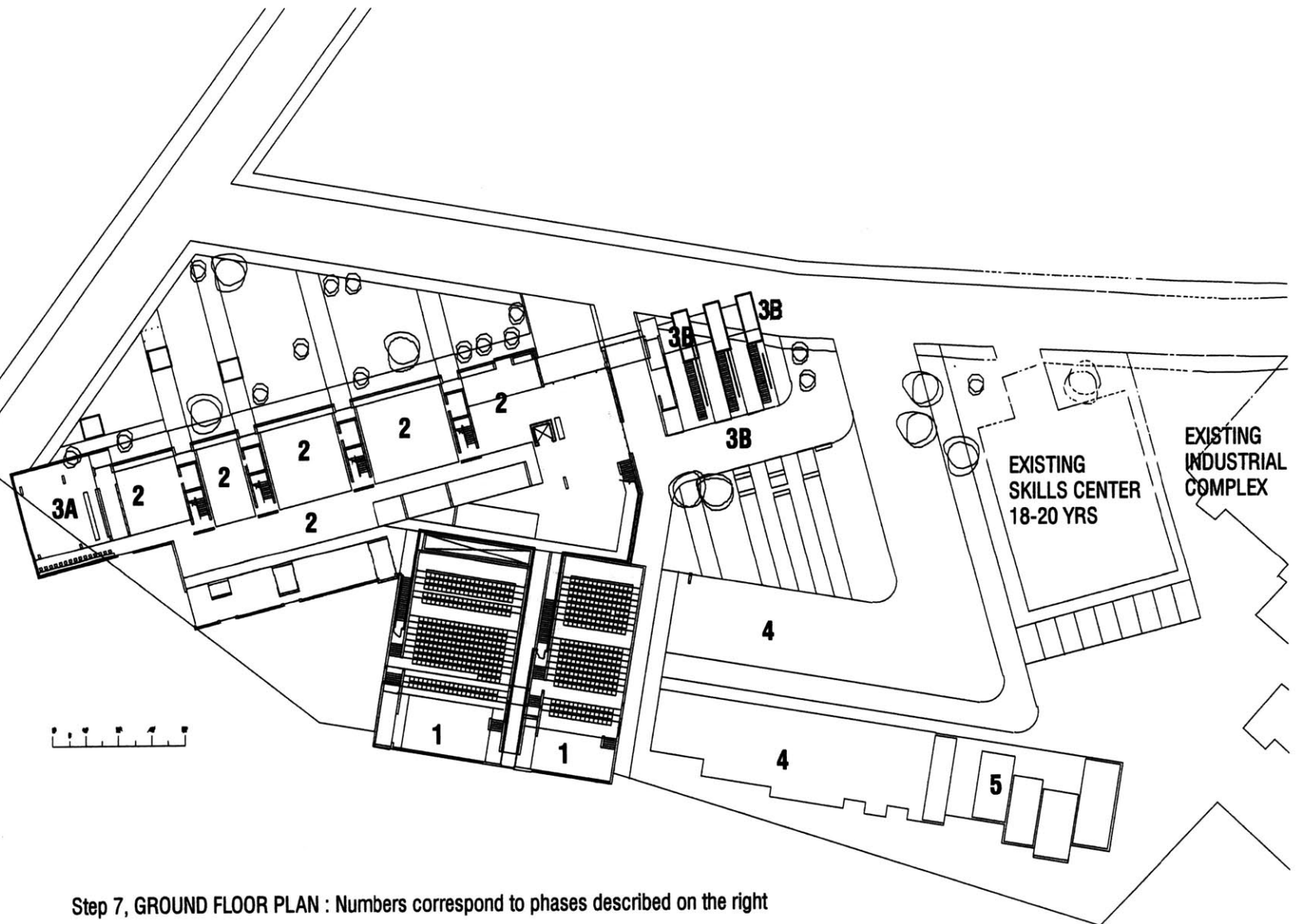
Step 5





The three diagrams show the rubberbanding from an urban scale (p.33), to a smaller scale (p. 34), and then moving back out to a larger urban scale in order to choose the initial architectural site : highlighted in white.

36 GROUND FLOOR PLAN

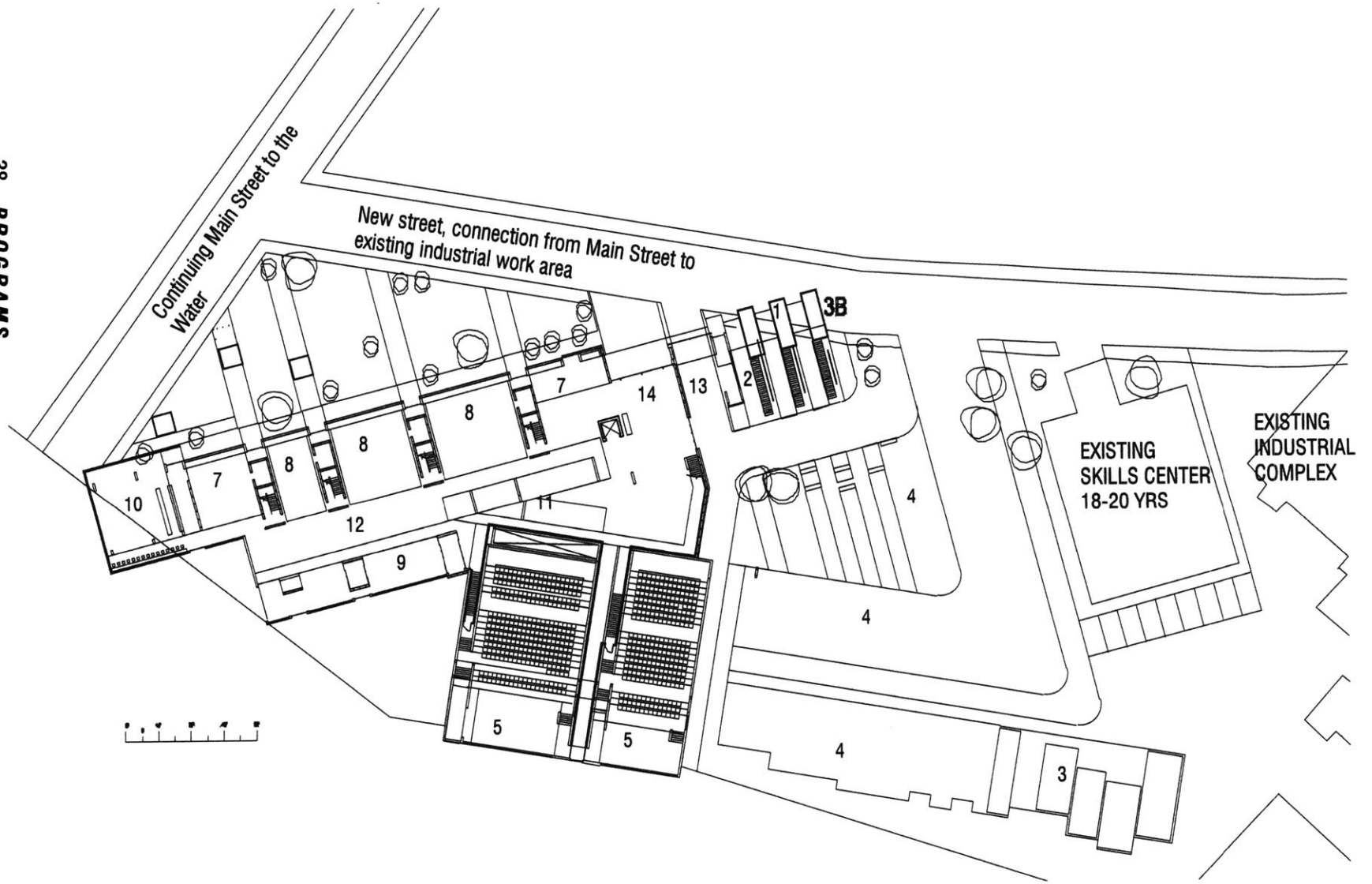


Step 7, GROUND FLOOR PLAN : Numbers correspond to phases described on the right

PHASING AT AN ARCHITECTURAL SCALE

- 1) PERFORMANCE DOCKS: re-inventing the use of the docks to create a new symbol for Notodden especially at night when the performance docks are lit: rubberbanding infrastructure, landscape, and architecture, Branding Notodden
- 2) CONSTRUCTING THE MIXED USE MEDIA BAND: R&D workplaces, Media Skills and Library, rubberbanding program and time with different potential users(work-day-night)
- 3A) RESTAURANT / CAFE / BAR : rubberbanding use, users, with time
- 3B) PRACTICE SPACES IN THE SKY BRIDGE : rubberbanding program and infrastructure
- 4) DEVELOPING A PERFORMANCE-OUTDOOR THEATER PARK: rubberbanding landscape, architecture and times of year
- 5) LOFTS AND LOADING DOCK: Rubberbanding transient spaces with permanent spaces

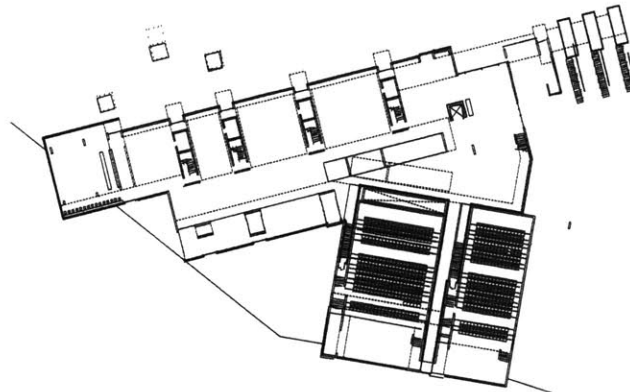
For this thesis project, I developed steps 1 - 3. At this point, steps 4 and 5 are only conceptual.



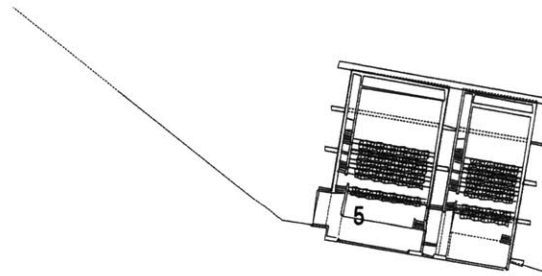


14	pedestrian entry	.		.	.	.		.	.
13	bike-auto entry		.			.	.	.	.
12	exhibit space			.	.	.	.		.
11	sitting area	.		.	.	.	.
10	cafe-bar			.	.	.	.		.
9	production-performance			.	.	.	.		.
8	r&d work-spaces	.		.			.		
7	skills - center	.		.	.		.
6	media-skills library			.	.	.	.
5	performance-lecture docks		.	.	.	.	.	.	.
4	outdoor performance space	.	.	.	.	.	.	.	.
3	lofts-studios	.	.	.		.	.	.	.
2	bike racks		.	.	.	.	.	.
1	skybridge-practice rooms	.	.	.	.	.	.	.	.

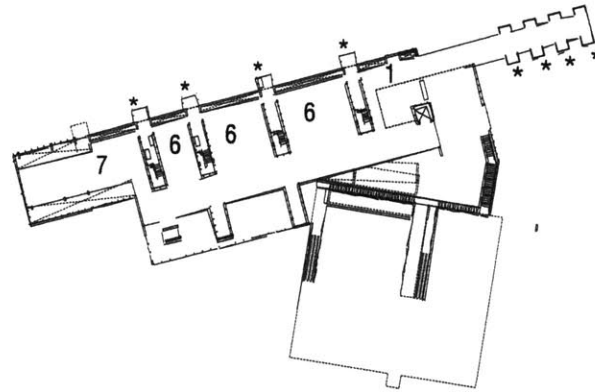
Table of activities and new spaces. Refer to Ground Plan.



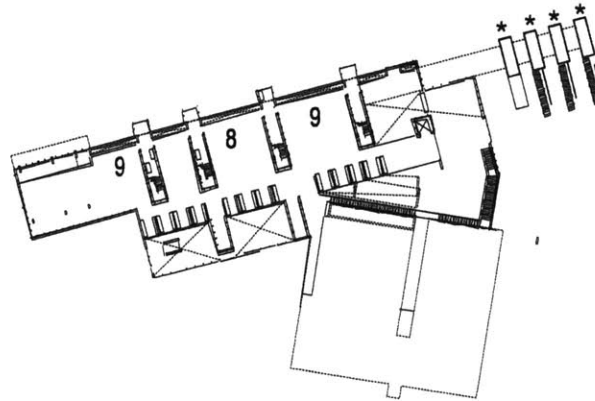
GROUND FLOOR
See page 38 for details



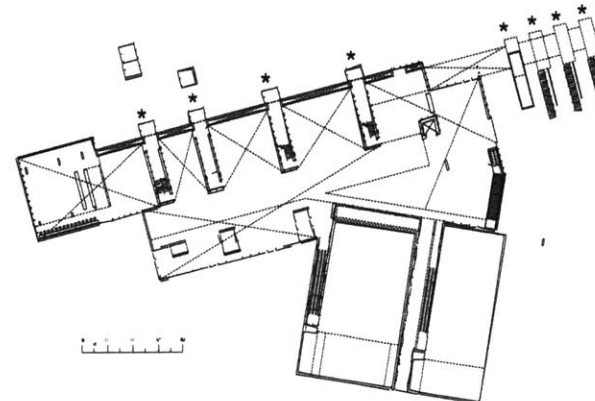
WATER LEVEL
Performance Docks, the
anchor for the first intervention
and urban vision



FOURTH FLOOR
Skills Centers, Media Production Area, Quiet Spaces



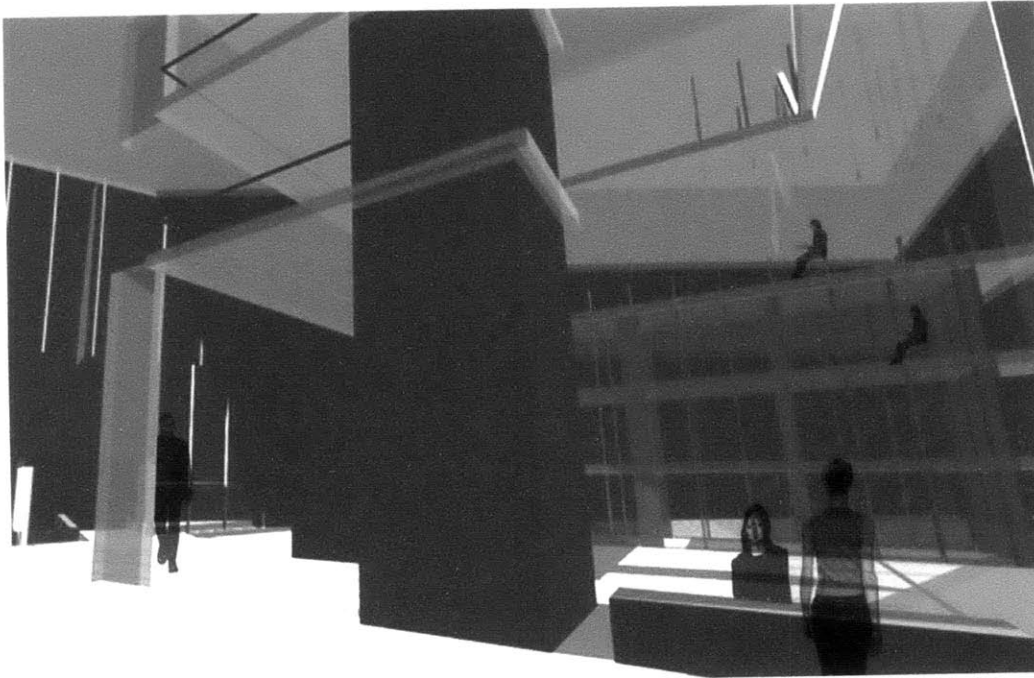
THIRD FLOOR
Collaborative Work spaces



SECOND FLOOR
* refers to quiet spaces.
Floors are structured around the making of large open collaborative environments and quiet zones for sleep, email, rest, reading, a phone call, conversation; linked to stairwells. Skin is 8mm U-glass with aluminum frames



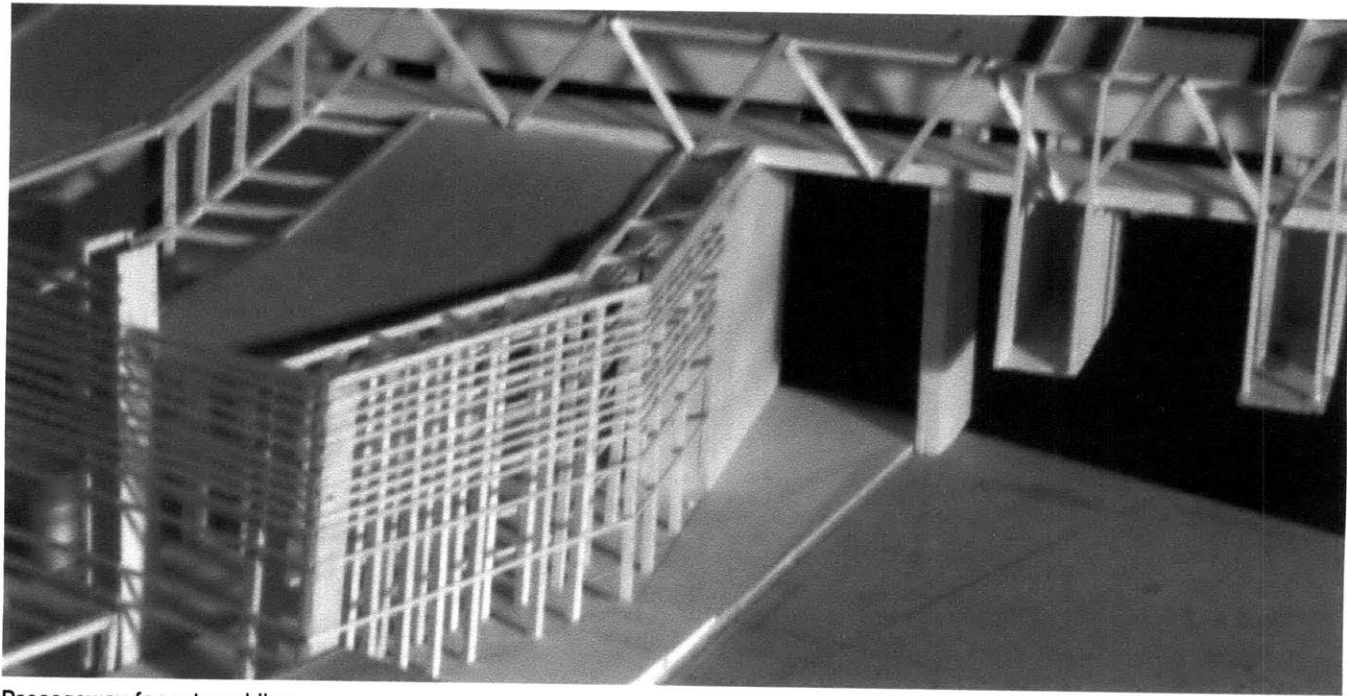
Pedestrian and Auto Entry, North Elevation



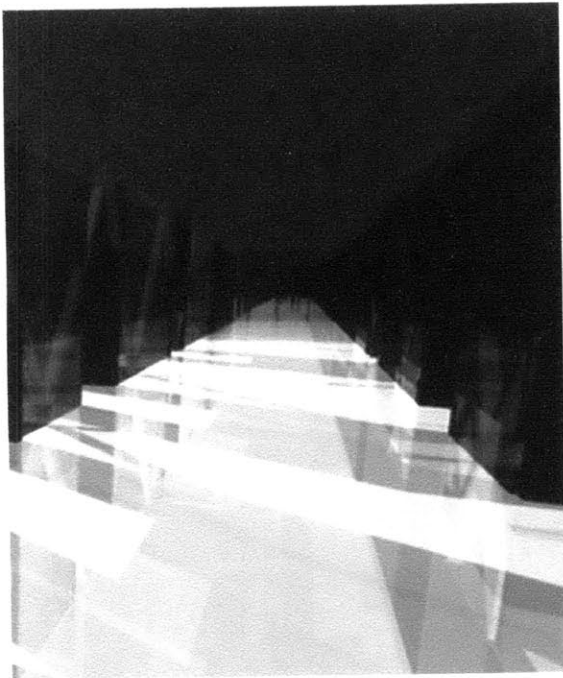
Receptionist's Desk, Work Spaces behind



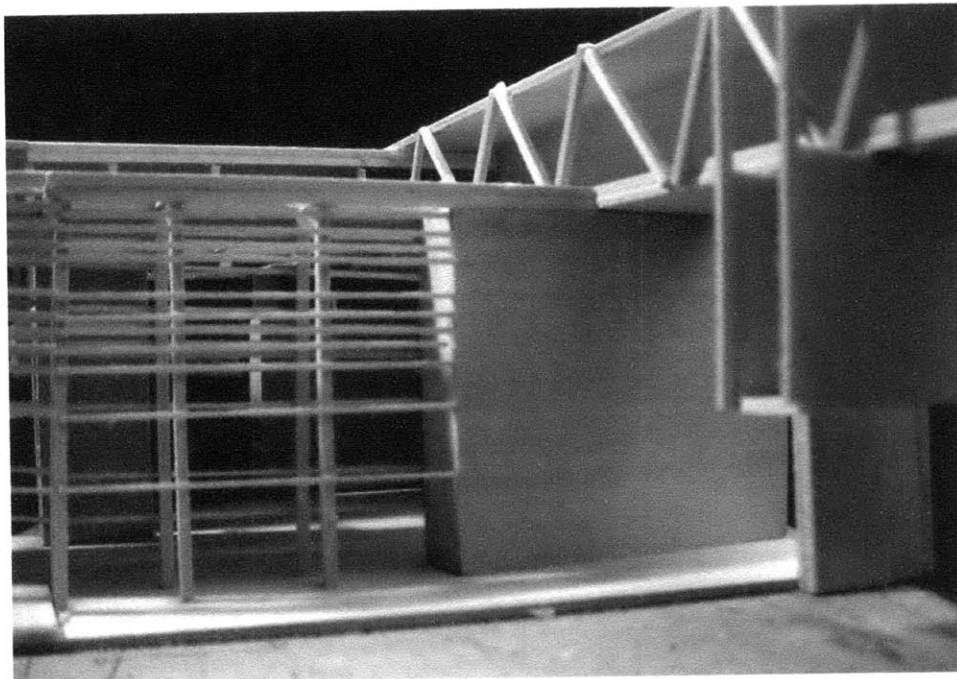
Circulation Path and Sitting area



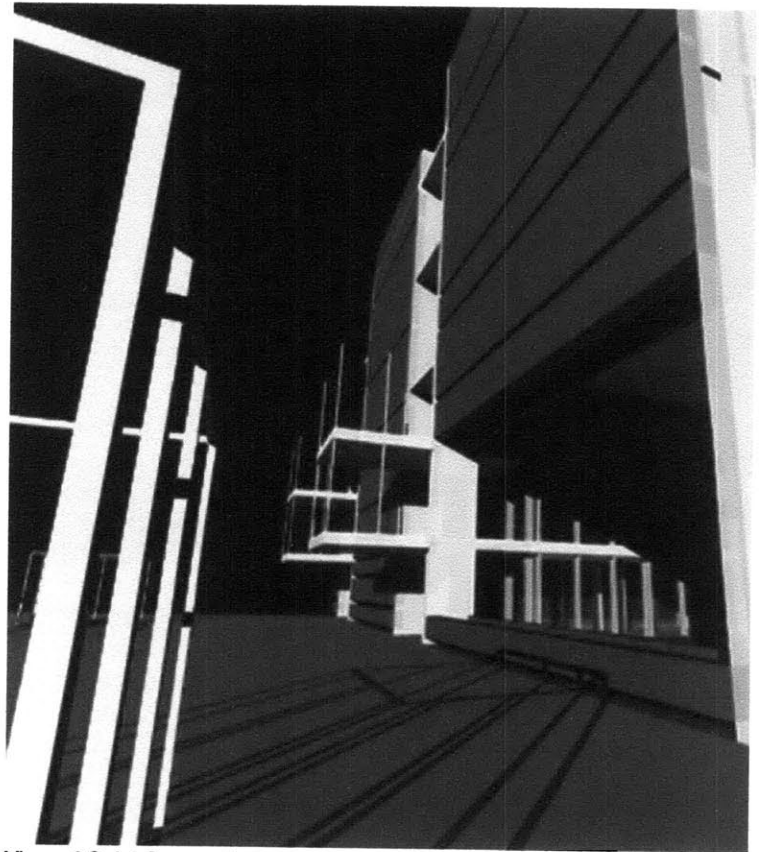
Passageway for automobiles
Practice Rooms that hang from the Skybridge



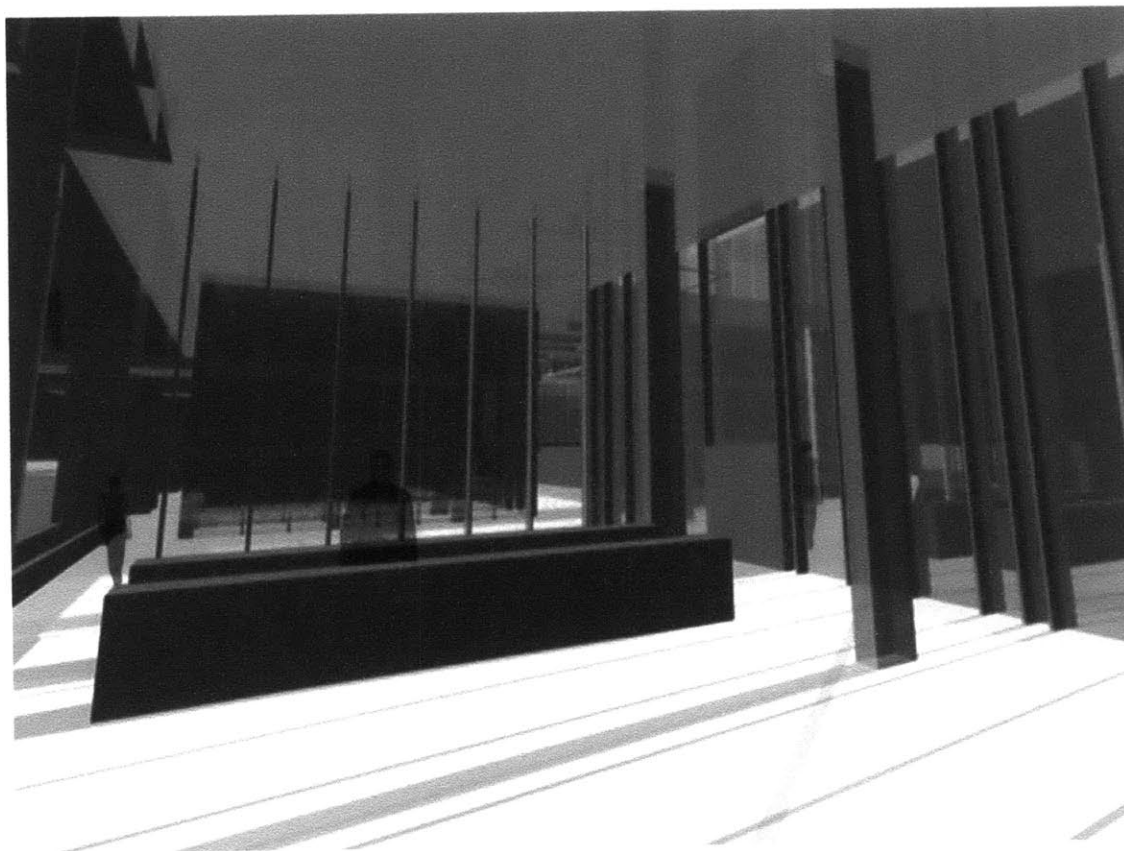
Inside the Skybridge



Auto Entry and Skybridge



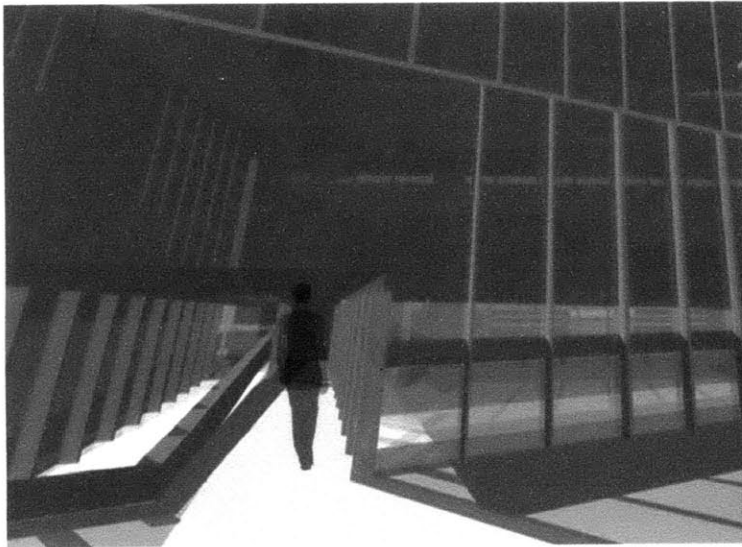
View of Quiet Spaces that extend beyond skin



View of Restaurant - Bar



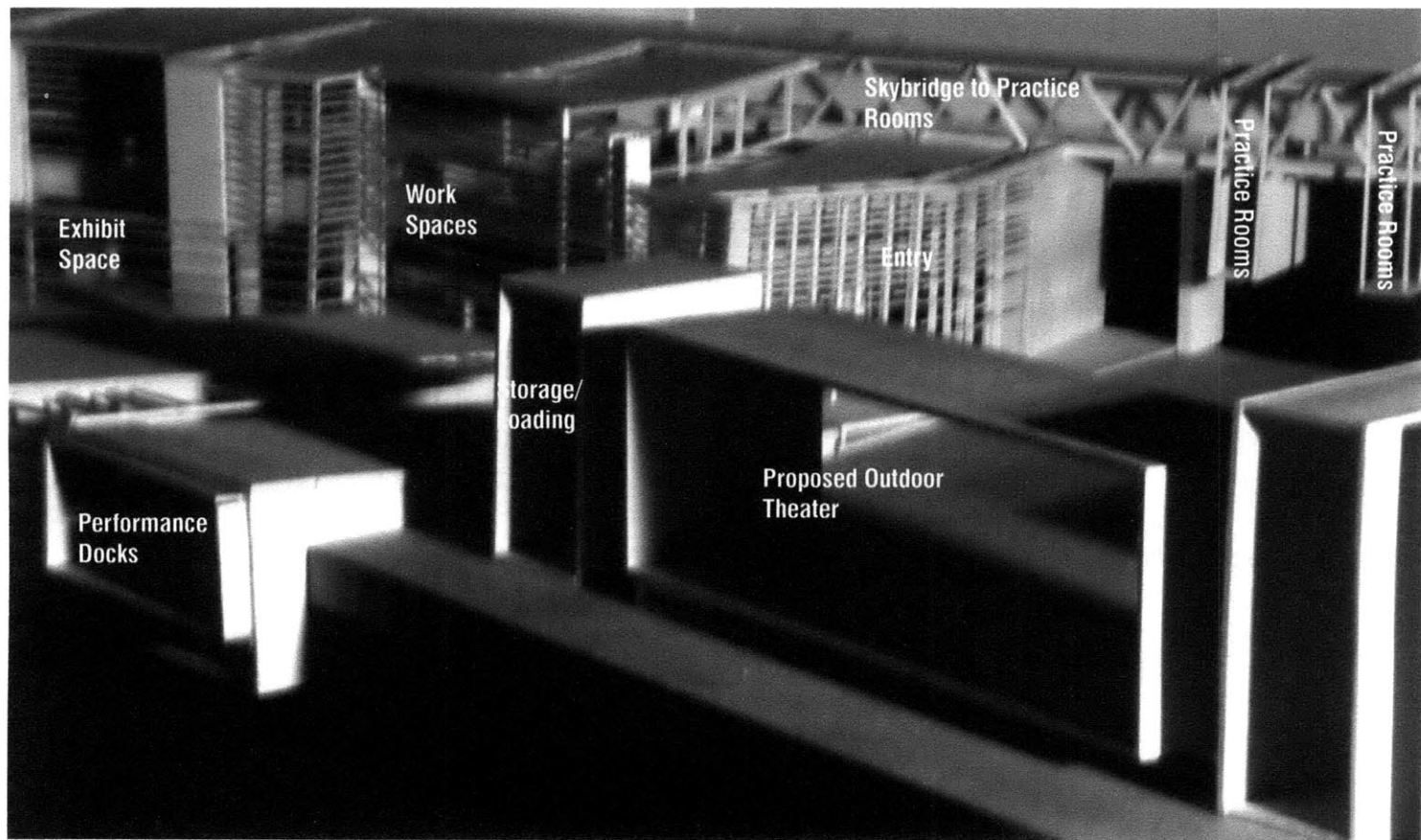
Performances at night, Reflection on Water



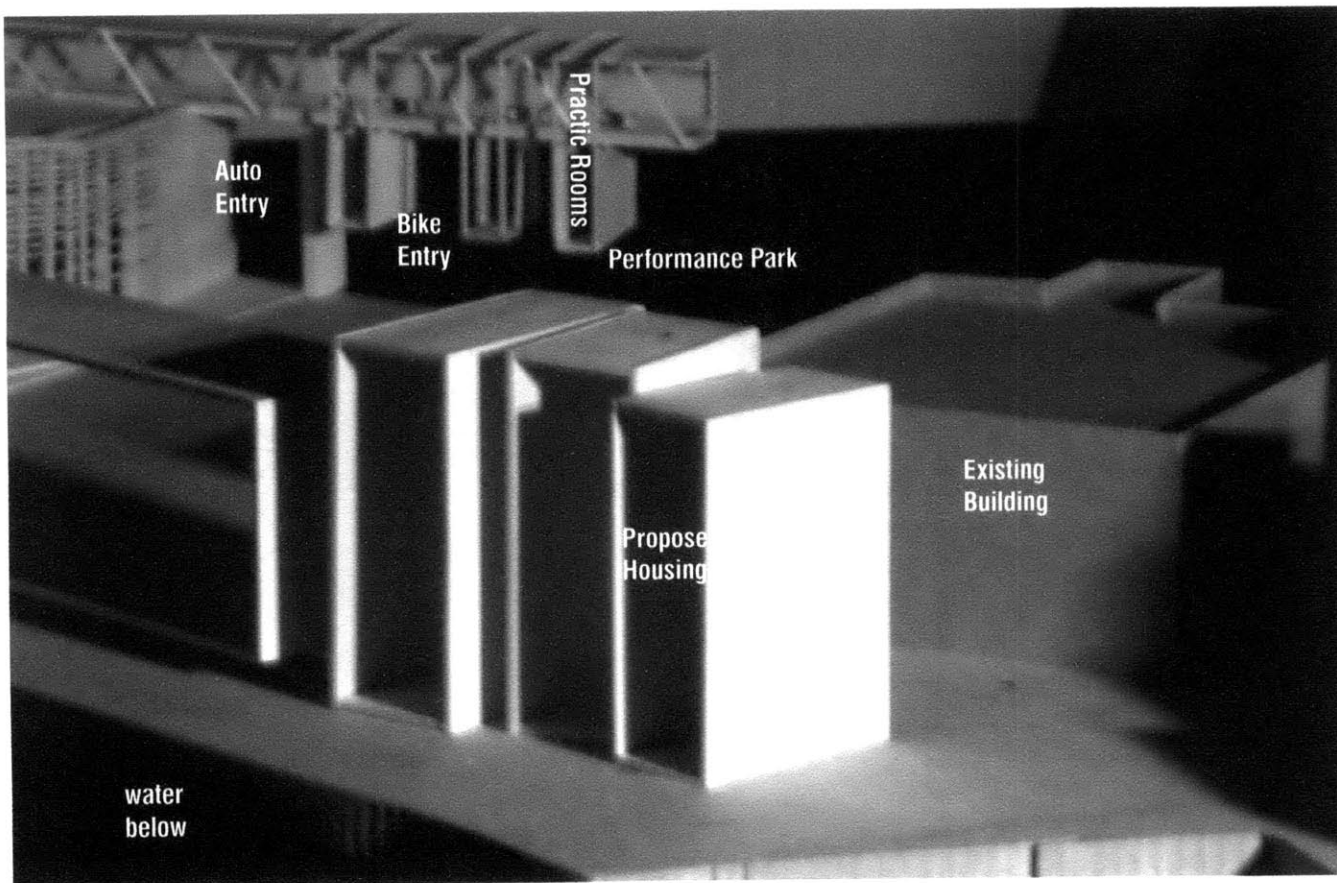
Path to Entrance of Performances Docks

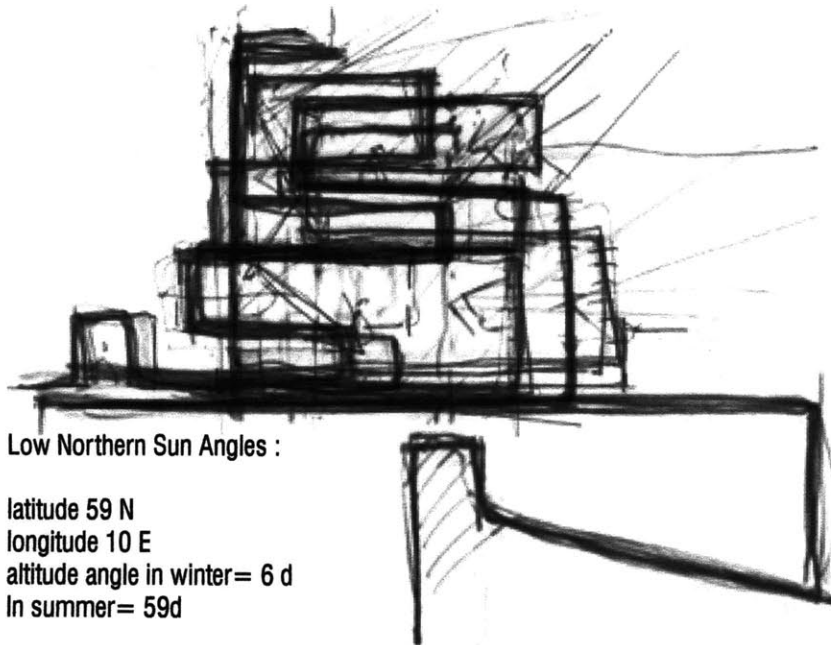


View from above into R&D and Skills Center



Southeast View of Alternative Design Proposal

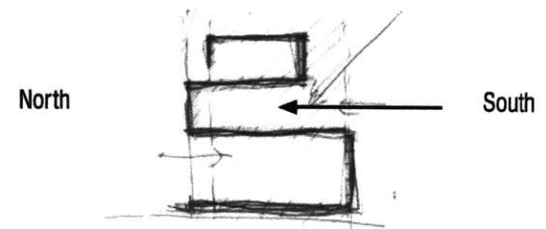
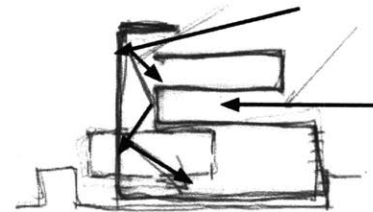
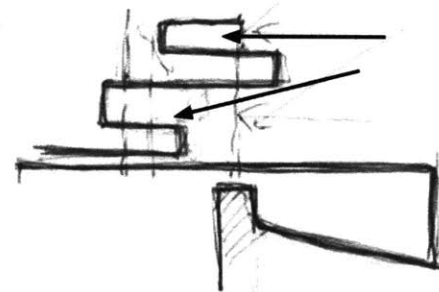
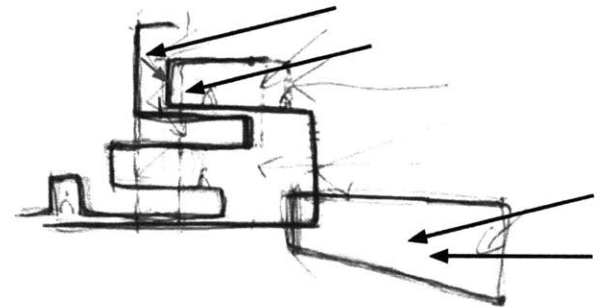




Low Northern Sun Angles :

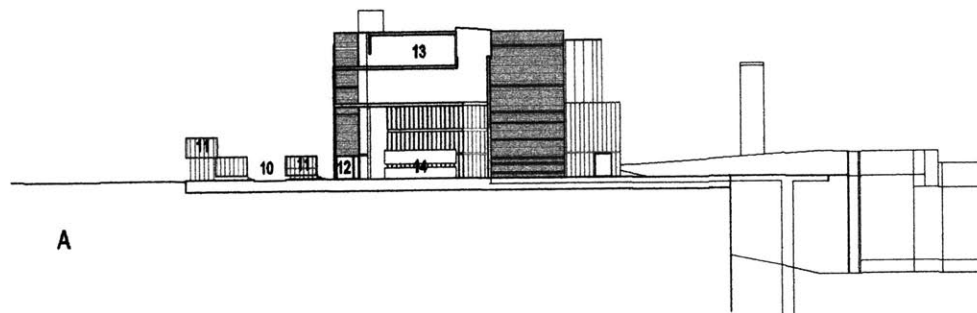
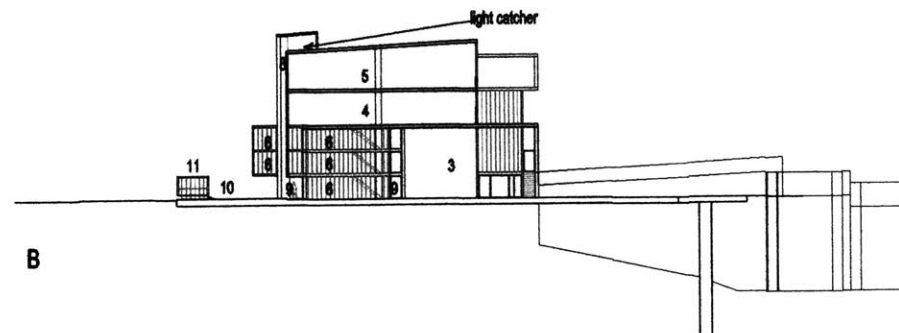
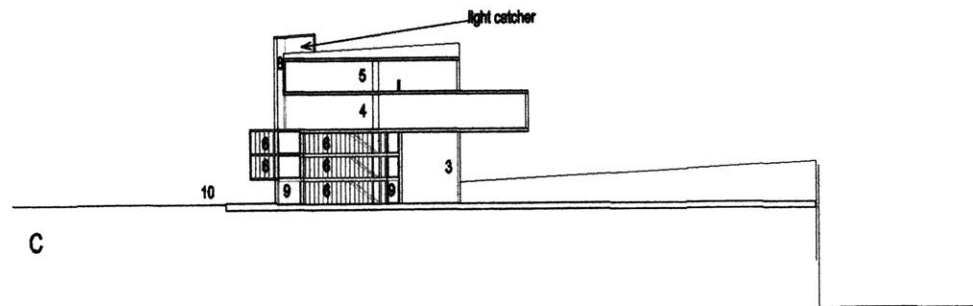
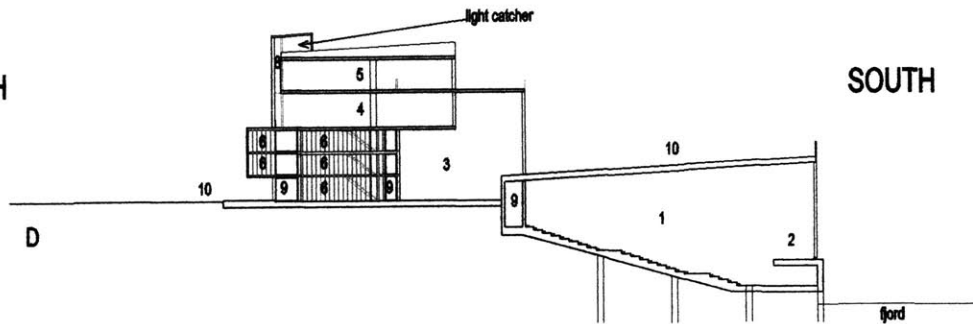
latitude 59 N
longitude 10 E
altitude angle in winter = 6 d
In summer = 59d

Sketching overlaps, pushing and pulling spaces to catch the low sun



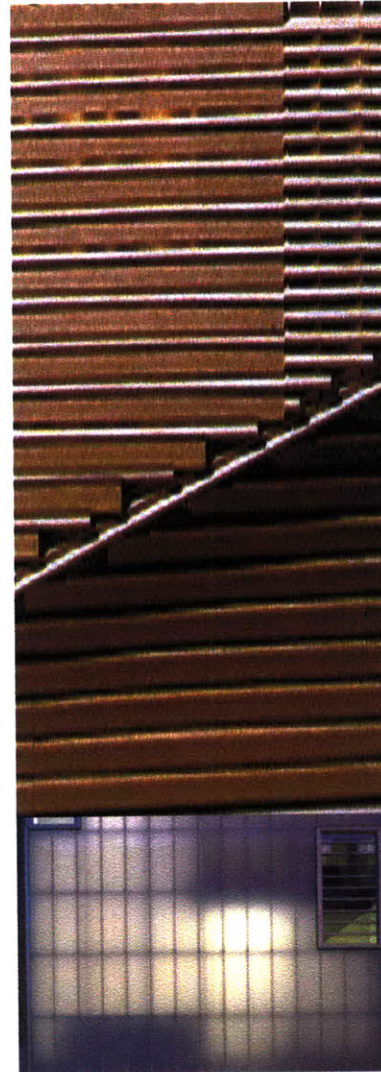
NORTH

SOUTH



- 1 performance docks
- 2 stage
- 3 exhibit space
- 4 r&d
- 5 production/skill center
- 6 quiet space
- 7 stairwell
- 8 lightwell
- 9 circulation
- 10 landscape
- 11 exterior play room
- 12 entry to cafe-bar
- 13 media library
- 14 cafe-bar

SCALE : 1/64" = 1'-0"



MATERIALS

6" wide cedar boards.

Sometimes there is space between the boards so that light from the inside can shine through.

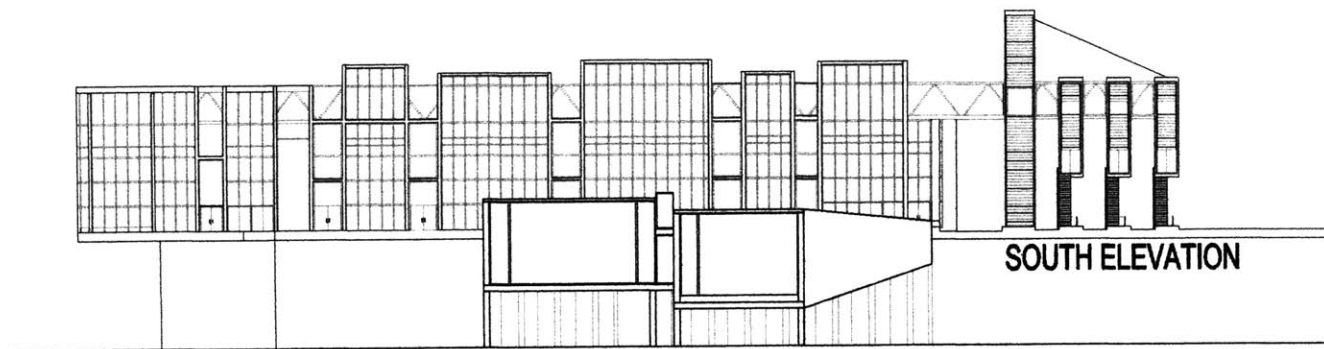
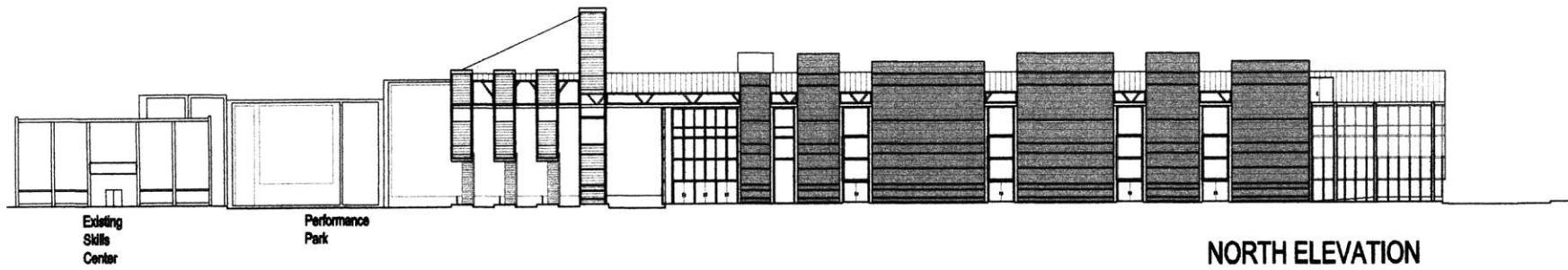
Typically cedar boards are applied on the North Elevations.

(Image from Anders Wilhelmson, "shelter for farm machinery", *Northern Factor*, 133)

8mm u glass, 16" o.c. aluminum frame.

Typically applied on the stairwells-quiet spaces, and on South Face of building.

(Image from Rogers Marvel Architect, The Studio Museum in Harlem, *A+U Sept 2001*)



SCALE : 1/64" = 1'-0"

CONCLUSIONS

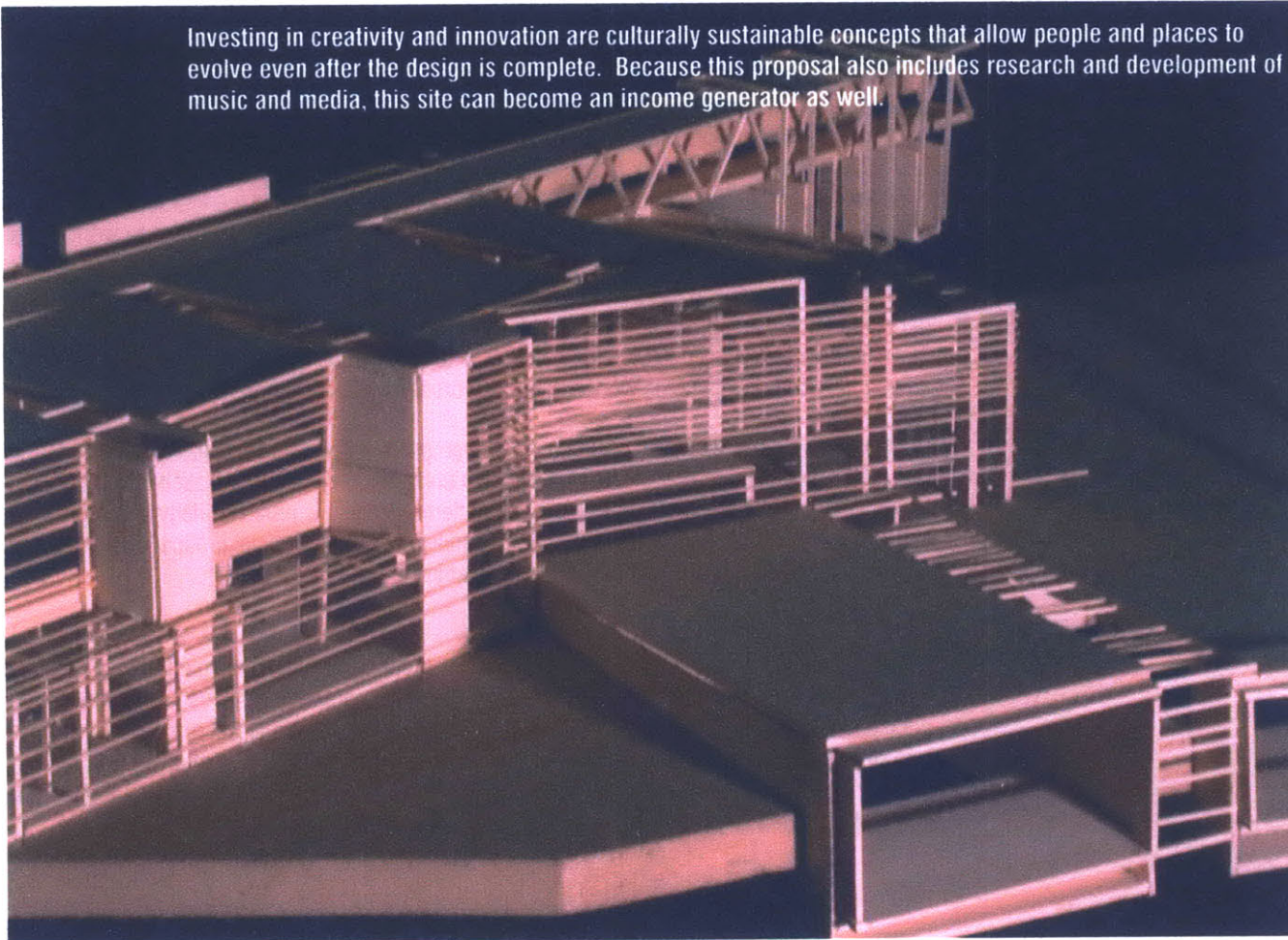
SOCIO-CULTURAL IMPACT

The existing proposal's initiative to develop a Blues Center is a very positive beginning. However, in order for change to really have a local and potentially global impact, the Blues Center needs to account for everyday urban patterns instead of only performances in August in order to evolve into an economic and educational force. As a result, this project should not only serve as a performance place in August for the annual blues festival, but should also act as a lecture - theater hall at other times of the year. It should also be a skills and media production center, and as mentioned above, provide research and development spaces for yet another audience. The hope is that there will be a social rubberbanding of people of various ages and status'. This first important seed could provide the beginning stages of a new work and culture for Notodden and brand a new image. In addition, with the assistance of festival organizers and musicians, these voices may make a great contribution and provide insight in renegotiating and constructing innovative ongoing projects in the city.

Cultural development is a long-term strategic concept that enables citizens to learn, perform, and produce. The mega malls and the hybrid movie theater-retail centers do not have that power. In fact, the strategy to "reclaim derelict American city centers" throughout the 1990's "has been to reinvest the "downtown" as an entertainment-driven shopping district seeded by movie theatre complexes and luxurious new sport stadiums. (Simeoforidis, 420) Many of these forms and investments have proven to be un-sustainable to the site and culture as they are developed as short-term strategic concepts. Therefore, it becomes easy to tear down or neglect these forms because they have little value to the community; they are perceived as replaceable. However,

Historically, creativity and innovation have been the lifeblood of cities. Yet there are special reasons for thinking about the problems of cities today in terms of creativity and innovation - or the lack of it. Today many of the world's cities are facing agonizing periods of transition. Old industries are disappearing - value added in cities is created less through what we manufacture and more through the application of new knowledge to products, processes and services. The factors that once shaped city development - transport, rivers, proximity of raw materials - have become less relevant...As we approach the 21st century there is a widespread understanding that it will be the creativity and innovativeness of our cities that will determine the future success of Europe and elsewhere... (Verwijnen, Preface)

Investing in creativity and innovation are culturally sustainable concepts that allow people and places to evolve even after the design is complete. Because this proposal also includes research and development of music and media, this site can become an income generator as well.



URBAN IMPACT

This project tries to recover place through a specific a vision. (Sassen) The vision for Notodden, Norway is to improve the skills of the labor force, raise the morale of the community in order to be productive in the local and global market, create performance spaces throughout city, and lastly create a place that can record and produce music and performances after the musicians and audiences are gone. The vision is to create a music and media city. The first step is the development of Notodden as a music, media and skills center that is open year round and open for the temporary visitors in the summer and the local youth and workforce throughout the year. It becomes a place to learn competitive skills or just to email in the media center and library, to work on media production in the R&D spaces, to see performance related exhibits on the first floor, to practice instruments in the skybridge, to hear a performance in the winter in the what used to be the docks, skateboard with friends in the performance park under the midnight sun in the summer, or in the same space attend a blues performance in the late afternoon. The second step is to allow future developments to rubberband off of this initial organizational and physical force so that new and spontaneous work and cultural processes can emerge. (Easterling)

Rubberbanding is, in this way, a strategy that attempts to engage the complexity and indeterminacy of the city, (Verwijnen, 30, quoting Stan Allen) and overturn contemporary urban approaches: to abandon the master plan and ensuing boxed, packaged, generic urban patterns. This new urban strategy is designed to evolve as people and programs evolve; and aims for the rubberbanding of different social groups, age groups, and time cycles in order to create the possibility of spontaneous and interesting interactions.

As Easterling suggests through the metaphor of the Appalachian Trail in Organizational Space, the strength of the trail was that it was a line of force. This “effected a simple but radical reversal in the flows of commerce and population migration.” (Easterling, 28) Music and media are the catalysts to radically reverse the low morale, lack of productivity, and local economies in Notodden. It is the force that radically can reverse the proposed generic urban design into one with vision. It is the force that becomes the urban generator of innovative urbanism and architecture over time.

The final objective is to overturn the generic-ness of the existing models of urban design and growth. Places of work, live, culture, and play do not need to be separated from each other as is conceived in traditional Fordist models. Urban forms do not need to be duplicated from one site to another. Instead the globalization of urban development needs to be considered in another light, as a liberating and creative force.

Beyond these territorial givens, the metapolis is the bearer of a new reality: the globalization of the urban condition. It represents freedom, emancipation from the pressures of history and geographical location, the distribution of new scales and programs, the downloading of formalist exercises, the development of business strategies, the abandonment of the architectural object, the intermixing of various cultural references, the development of new materials, the quest for the new." (Simeoforidis, 419, quoting Infussi)

Globalization frees us to invent as we go. We must invent if we hope to create places that are not just economically sustainable but also culturally sustainable. Designing place for the multiplicity of localized work, social, and artistic cultures over time is vital in making this happen. And as we build on this, we recover place from the globalization of the generic.

Andreu, Paul. "Tunnelling". *Anyhow*. Cambridge, MA: MIT Press, 1998.

Bernado, Jordi and Ramon Prat. *Atlanta*. Barcelona, Spain. Actoar Produccions, 1995.

Bjornvold, Torgeir. "Two page Outline of History of Notodden," 2000.

Blum, Valentin. "Unstable Geographies." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture, 2000.

Boeri, Stefano and Multiplicity. "USE Uncertain States of Europe." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture, 2000.

Bonomi, Aldo. "Smooth Space." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture, 2000.

Castells, Manuel. *The Rise of the Network Society*. USA: Blackwell Publishers Ltd., 1996.

Castells, Manuel. "The Great Twenty-First-Century Paradox: an Urban World Without Cities?" Buell Lectures: Columbia School of Architecture and Planning. New York: Columbia University, 2001. http://www.arch.columbia.edu/Buell/mmarchive/s_2001/castells/castells_fs.html

Davidson, Cynthia C. Ed. *Anyhow*. Cambridge, MA: MIT Press, 1998.

Easterling, Keller. *Organization Space: Landscape, Highways, and Houses in America*. Cambridge: MIT Press, 1999.

Friedman, Ken. "Restructuring the City: Thoughts on Urban Patterns in the Information Society." Den Oppna Staden Conference. Stockholm: The Swedish Institute for Future Studies, 1996.

Garreau, Joel. *Edge City: Life on the New Urban Frontier*. New York: Doubleday, 1991.

Gandelsonas, Mario. *X-Urbanism: Architecture and the American City*. New York: Princeton Architectural Press, 1999.

Graham, Stephen and Simon Marvin. *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London, 2000.

Hagson, Anders, Mats Nordahl and Peter Ullmark. "New Work City: A research program aimed at developing cities as environments for business innovation and sustainable economic growth." Chalmers Institute: Innovative Design - Architecture. Goteborg, Sweden: Chalmers Innovative Design, 2001.

"Helsinki Housing Developments 1994, Planning and Building." City of Helsinki, Development Unit: Helsinki, 1994.

Interview with Torgeir Bjornvold, inhabitant of Notodden at his home in Notodden. Conversations on History of Notodden, Goals of Project viewed by interested citizen, and Tour of City. Norway: 06-06-01.

Interview with Olaf Forberg, Developer of Notodden Project at his office in Notodden. Conversations on Goals of Projects, Background Information. Norway: 06-07-01.

Interview with Vice Mayor Odd Johannsen of Notodden at his office in Notodden. Conversations on Problems and Hopes for Notodden. Norway: 06-07-01.

Interview with Heikki Somervuo, Project Manager of Arabianranta Village on site in Arabianranta and Office. Conversations on Project Development and Background Information. Helsinki, Finland: 06-01-01.

2

Interview with Peter Ullmark at Chalmers Institute. Conversations on the Open Space Project, Mobility Project, and New Work City. Goteborg, Sweden: 06-05-01.

Interview with Jan Verwijnen at the Kaapeli Cafe. Leader the Pro-Kaapeli Committee. Conversations on Story of Cable Factory and Tour of Cable Factory, Theoretical Issues about the Creative City, and the Arabianranta Project. Helsinki, Finland: 05-30-01.

Johannsen, Odd. Notodden Competency Statistics 2001.

"Kaapeli: Museum, Dance, Theater, Athletics, Lofts." www.kaapelitehdas.fi

Koolhaas, Rem. "China: Project in the City". *Anyhow*. Cambridge, MA: MIT Press, 1998.

Kwinter, Sanford and Daniela Fabricius. "The American City." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture, 2000.

Kwinter, Sanford and Daniela Fabricius. "Generica." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture, 2000.

La Varra, Giovanni. "Post-It City: The Other European Public Spaces." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture, 2000.

Architectural Drawings, 08.12.99.

Architectural Drawings, 03.30.00.

Lynch, Kevin. *A Theory of Good City Form*. Cambridge, MA: MIT Press, 1981.

Museum of Finnish Architecture. Northern Factor: New generation from the North. Finland: Museum of Finnish Architecture, 1997.

Mitchell, William J. *City of Bits: Space, Place, and the Infobahn*. Cambridge, MA: MIT Press, 1995.

Norsk Form. *Fargeplan for Notodden: Konsept*. (Architectural Drawings) Norway.

Palonheimo, Maija and Salminen Timo. Art and Design City Helsinki (ADC). "Helsinki Virtual Village Real Estate Technology". Powerpoint Presentation at Press Conference at Media Center LUME, Helsinki. December 12, 2000.

"Portaali of Arabianranta: Office Space for the Future." (Brochure) Joint Effort from City of Helsinki, University of Art and Design Helsinki and Visual Systems Oy.

Sassen, Saskia. "The Global City: Strategic Site/New Frontier." University of Chicago, 1999.

Simeoforidis, Yorgos. "Notes fo a Cultural History Between Uncertainty and the Contemporary Urban Condition." *Mutations*. Barcelona, Spain: ACTAR, Arc en reve Centre d'Architecture.

Sorkin, Michael. *Wiggle*. New York: The Monacelli Press, 1998.

"University of Art and Design Helsinki UIAH, LUME Media Center," www.uiah.fi/lume.

Ullmark, Peter and Henric Benesch, Tobias Enberg, Per Eriksson, and Cecilia Gustafsson. "Open Space: En Miljo for Innovativa IT-Baserade Foretag." Goteborg, Sweden: Chalmers Innovative Design, 2000.

Vervijnen, Jan ed. and Panu Lehtovuori. *Creative Cities: Cultural Industries, Urban Development and the Information Society*. Helsinki, Finland: University of Art and Design Helsinki UIAH Publications, 1999.

KAAPeli, HELSINKI

**PRIME LOCATION
IN THE HEART OF
INFORMATION SOCIETY**

Portaali is located in the center for industrial arts that will house the biggest concentration of design- and media technology of Scandinavia. The future Helsinki Virtual Village will provide facilities for companies operating in the fields of education, information network and media communications as well as advertising agencies and architects' firms. It will be the world's hottest center for development of wireless communications and an ideal setting for leading technology companies developing the latest communication technologies. Close cooperation between the University of Art and Design Helsinki and the local business community will create plenty of useful synergies.

KAAPeli (CABLE FACTORY), HELSINKI

EXISTING PROPOSAL - CITY WANTS TO CREATE A NEW SKILLS / WORK CENTER, BUT THIS PROPOSAL IS AN EXAMPLE OF COPYING AND PASTING OF IDEAS NOT THE CREATION OF A NEW INNOVATIVE CENTER FOR NOTODDEN AND KONGSBERG

WHAT IS WRONG WITH THIS PICTURE?

HOUSING SHOPPING

BOUNDARY DIVISIONS ACCORDING TO PARCELS, PROGRAMS, ZONES

BLUES CENTER R&D

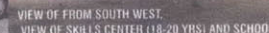
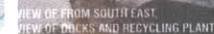
BOUNDARY SEPARATIONS
MASTER PLANNED

BOUNDARY EXCHANGES
IMPORTANT BEGINNING HANDS

NOTODDEN, NORWAY

GOAL WAS TO INVESTIGATE A CURRENT PROPOSAL OF A CITY TRYING TO CREATE A NEW WORK CENTER - REDFINING WORK, REDEFINING BOUNDARIES OF WORK IN RELATIONSHIP TO THE CITY'S HISTORY, ECONOMIC AND CULTURAL NEEDS, AND SITE

01 RENEGOTIATING BOUNDARIES AT MANY SCALES NEW BOUNDARY EXCHANGES BETWEEN WORKING, LIVING, CULTURE, PLAY, REST



13 THIS THESIS PROPOSES A STRATEGY

that enables the program to emerge
 program enables spatial manipulations
 spatial qualities enables exchanges and interactions
 This strategy is the idea of RUBBERBANDING in which
 urban environments, programming, skins, flexible openings, visual connections, lighting, surprises are read as boundaries that can be
 manipulated in order to create a vital and emergent work, live, performance and play space.

PROBLEM

Current models of urban development often copy and paste x-urban models onto multiple sites which result in the creation of office park urbanism. Even though there may be some political, infrastructural and cultural support for innovation, this form is repeated with little regard to site, local traditions and economies.

As a point of departure, I investigated a site in Notodden, Norway currently undergoing change and development from a non-competitive industrial city to a city that actively produces culture and knowledge. The municipality hopes to create an active and enlivened urban environment which will re-skill its citizens with new tools and revitalize the region with competitive industries. However, the current proposal consists of segregated parcels dominated by parking lots and American developer driven urbanism which typically results in a programmatically and socially segregated environment. Given the goal of creating a "milieu for innovation", a new urbanism must arise that promotes the possibility of exchanging ideas with a wide range of groups, allows for a seamless sharing of resources, and encourages unpredictable, spontaneous interactions and collaborations. Evaluation of this proposal aims to understand problems inherent within this process of development in order to invent an alternative process of re-negotiating boundaries in this x-urban, industrial, and wired condition through RUBBERBANDING URBANISM.

RUBBERBANDING

urban environments
 programs
 spatial concepts
 design process

STRATEGY

RUBBERBANDING attempts to invent and diagram an innovative and iterative design process at regional, urban and architectural scales.

At a regional scale = pulling lines of sight as a method of determining initial interventions that result in lines of force.

At the urban scale = stretching, pulling, bending, and binding different programs in initial phases of development.

At the architectural scale = stretching, pulling, bending and binding different activities in a complex of buildings while keeping boundaries distinct and legible from the mass.

DESIGN

The concept manifests in a performance, media production, and skills center that will revitalize the urban fabric and re-skill the people of Notodden. The architecture creates a dialogue between various programs, existing landscapes and built forms, and old and new symbols. This thesis will serve as an example of an alternative strategy to master planning and program-separated urbanism.

03 ECONOMIC, CULTURAL, CLIMATIC AND URBAN CONTEXT

CHANGE IN INDUSTRY

In the last 20 yrs, cities throughout Europe went from pure production to an informational society. Notodden is a great example of a city needing to change in order to be competitive with the global market.

The process is moving forward, but Notodden still has a long way to go. Competence is lower here than the rest of Norway because of the lingering industrial culture. There is a tradition here of the son who took over the father's work. That is not necessary here now. Not much work it hurts a lot more in Notodden. The speed of change and lack of competence does not match. Need to start a competence development for city. We support them creating their own work and working style. But need to learn the skills. Philosophy with new infrastructure: can be more competitive. Encourage individual and corporate financial growth.

AIMS

Want to create European Blues Center. Another proposal. Implemented in Master Plan.

Development for main street for main plan: make small interventions. And have heating under street. Will continue the rest next year.

Improve education for all.

TOTAL TIMEFRAME IN 10-15 YEARS

- 1) next step is refurbishing street by 2002
- 2) Build new terminal for buses (fully financed from municipality). Will start late this year.
- 3) From state funds, develop blues music center by 2003.
- 4) Develop Family Housing: within 2 to 3 years.
- 5) Have supermarket and shopping mall (read investors)
- 6) And new offices.

SCOPE

Funds from government used for 3 areas:

- 1) competence development
- 2) infrastructure: communications and transportation mostly downtown and in main street
- 3) financing package for companies to realize their goals

SHAREHOLDERS

NUAS Utilising is a development company founded in 1997. In 1997 received 73 million Norwegian Kroners as a compensation package from government starting 2002-2003. The shareholders are the Notodden Municipality, Tronnes, Hydro.

CLIMATE

The climate is temperate, and the severity of winter along the coast is moderated by southerly air currents brought in above the waters of the North Atlantic Drift, which is warmed by the Gulf Stream. Summers are relatively cool throughout the country; rainfall is high everywhere, most of all on the coasts, of course.

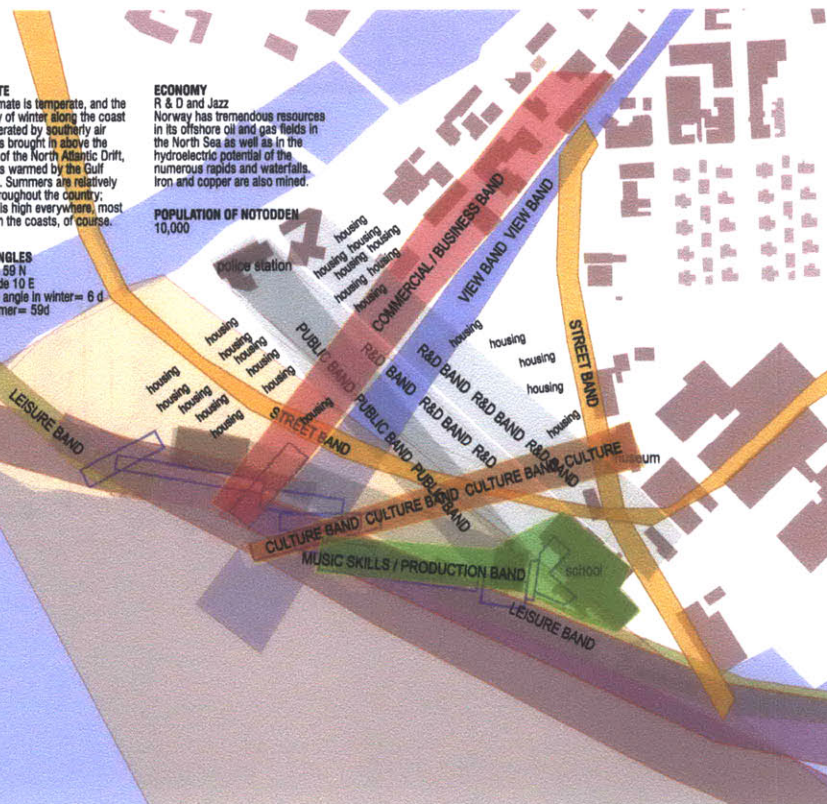
SUN ANGLES

latitude 59 N
longitude 10 E
altitude angle in winter = 6 d
in summer = 59d

ECONOMY

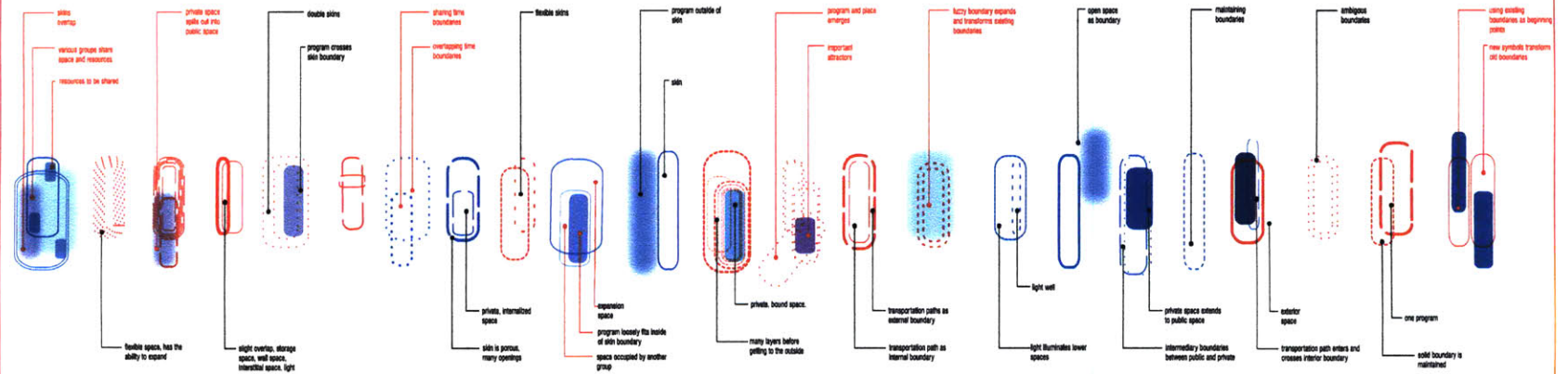
R & D and Jazz
Norway has tremendous resources in its offshore oil and gas fields in the North Sea as well as in the hydroelectric potential of the numerous rapids and waterfalls. Iron and copper are also mined.

POPULATION OF NOTODDEN
10,000



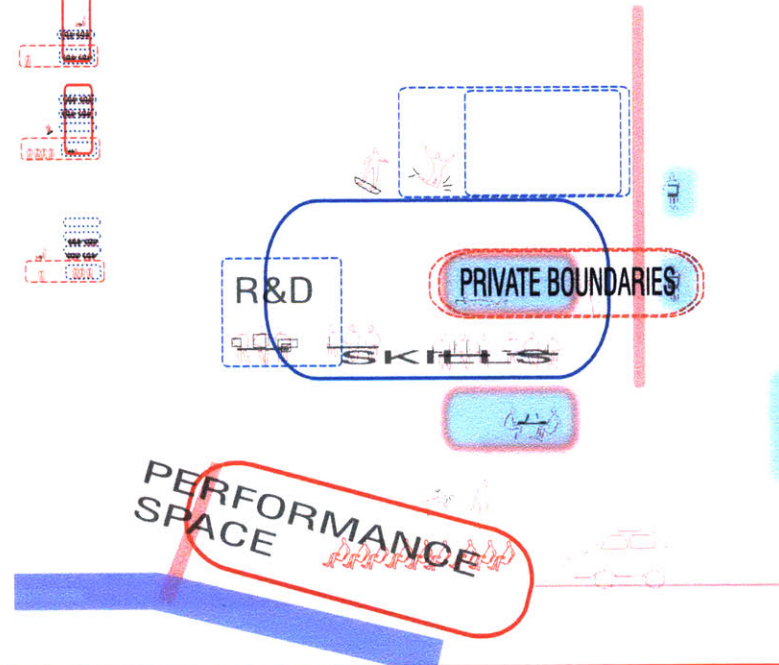
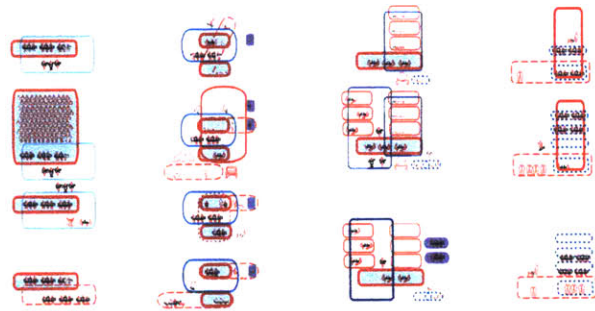
CONCEPTS: STRETCHING, OVERLAPPING, BINDING

PROGRAMS ARE NOT BOUND WITHIN THEIR OWN PARCELS. THEIR OWN SPATIAL CONDITIONS. INSTEAD, THEIR BOUNDARIES STRETCH, OVERLAP, AND BIND WITH OTHER BOUNDARIES. THESE BOUNDARIES ARE ARTICULATED URBANISTICALLY AND SPATIALLY IN ORDER TO REVEAL THE FINER BANDS.



SECTION STUDIES

THE RUBBERBANDING OF THE PROGRAMS, SPATIAL QUALITIES AND SOCIAL INTERACTIONS STRETCHES AND OVERLAPS DIVERSE BOUNDARIES.

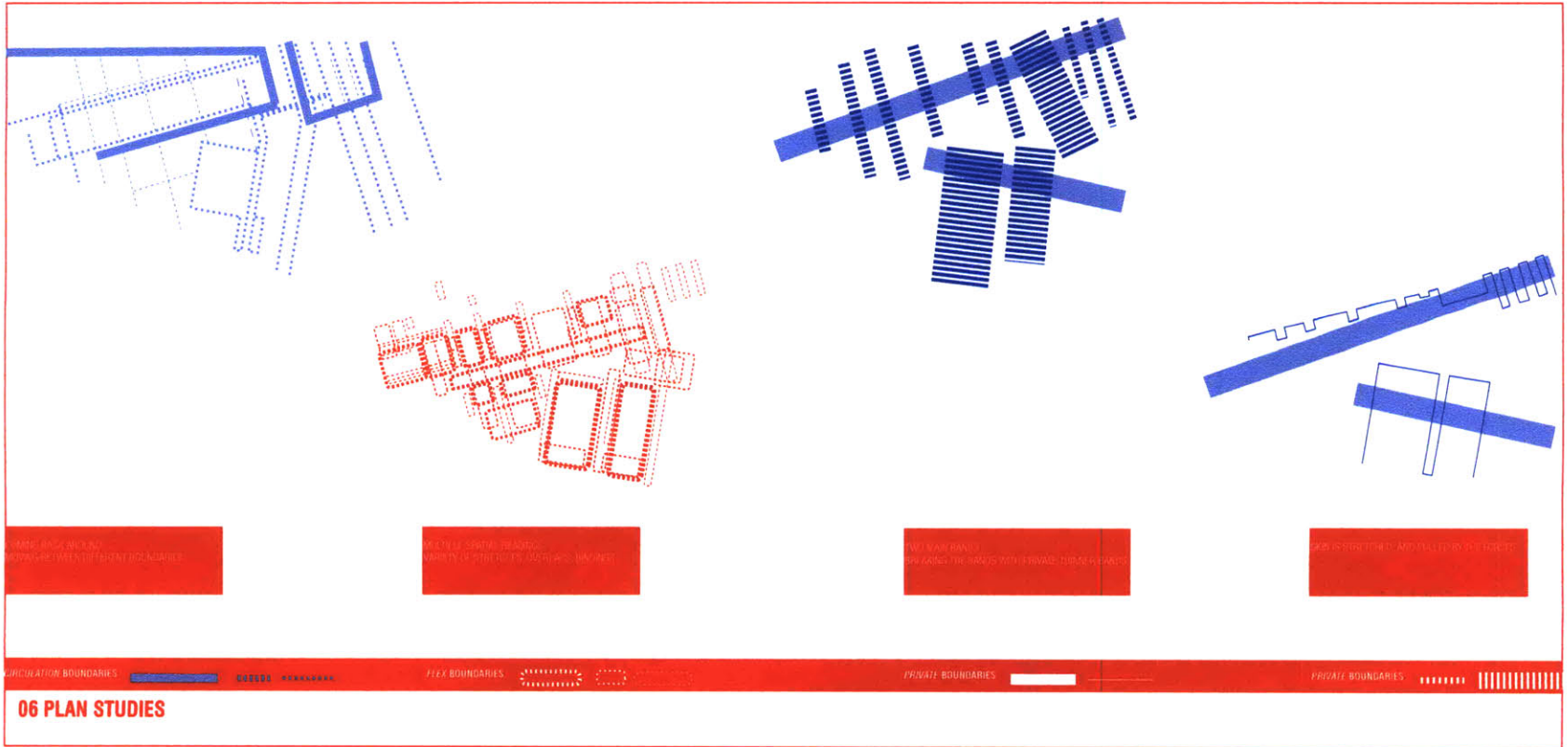


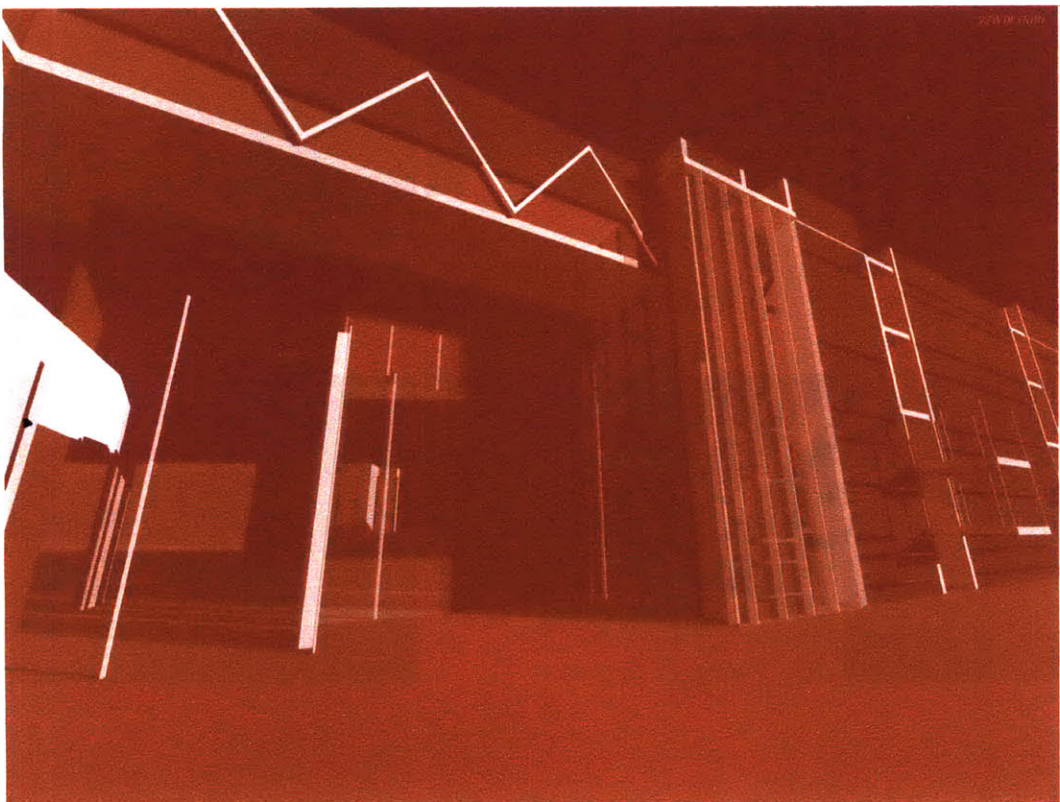
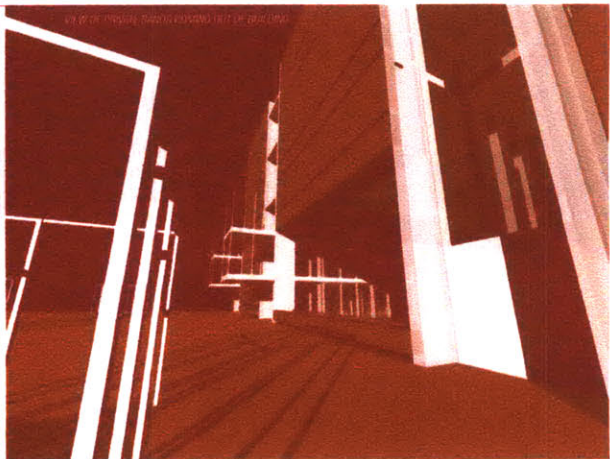
FORCES

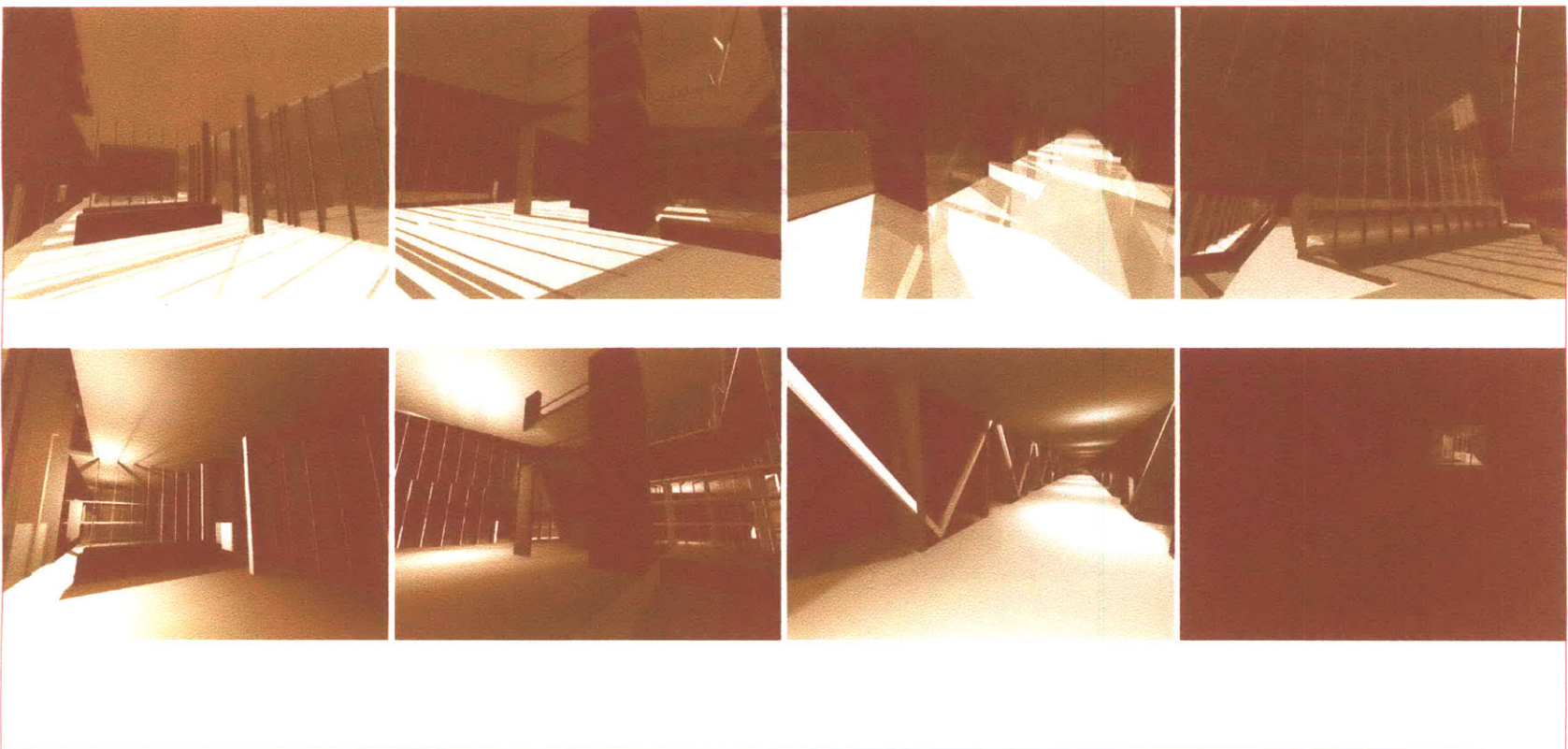


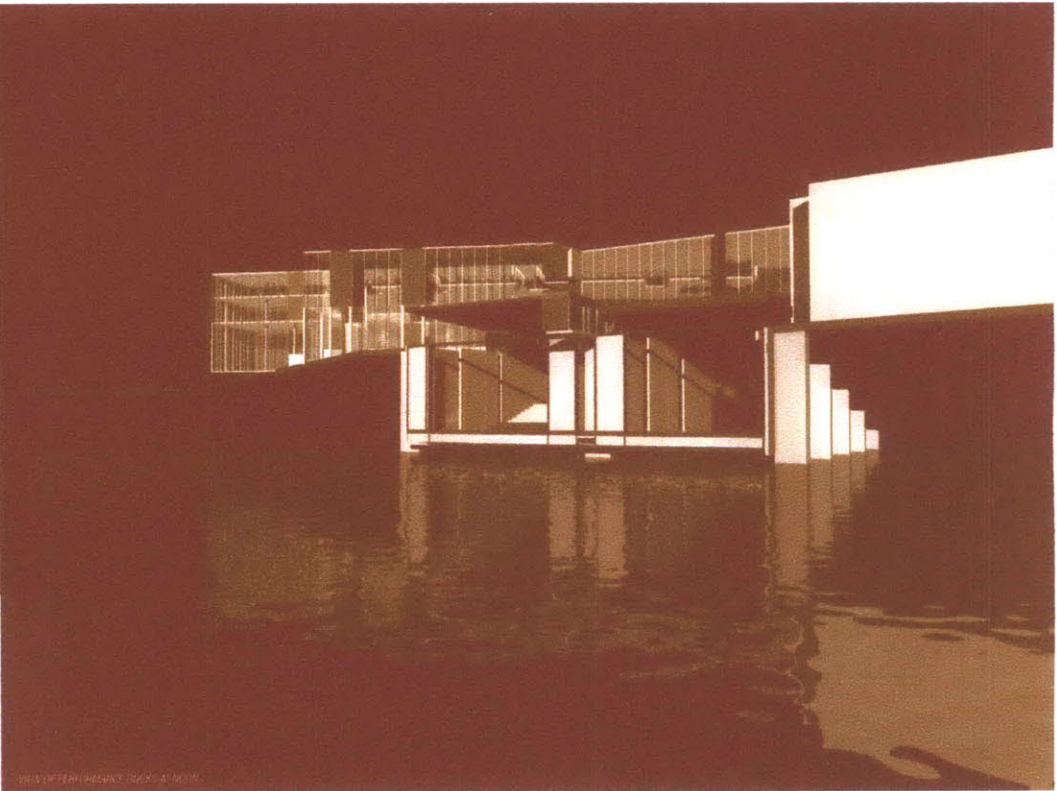
OBJECTIVES

- create opportunities to meet,
- create visual communication
- allow for coordination of resources
- allow for programmatic exchanges
- create a place for various groups









VIEW OF THE BUILDING FROM THE WATER



VIEW OF THE BUILDING FROM THE WATER